TELEFUNKEN SERVICE

AUDIOVISION
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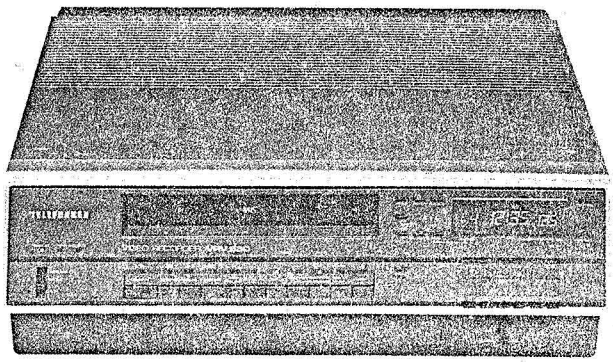
AUDIOVISUEL

Videorecorder
VRV 630/VR 530

Druck-Nr. 319 480 253

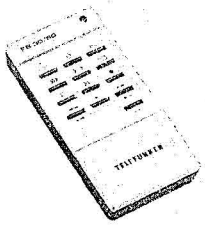
Schaltpläne
Lagepläne
Ersatzteile

Schematic Diagram
Component Layouts
Spare Parts



VRV 630
E.-Nr. 552 470 930

VR 530 o. Abb.
E.-Nr. 352 470 932



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Technische Daten:

Systemdaten

Fernsehnorm	CCIR – 625 Zeilen – PAL
Aufzeichnungsart	VHS-PAL (Schrägaufzeichnung)
Videoband	1/2" cassettiert
Bandgeschwindigkeit	23,39 mm/sec (± 0,5 %)
Aufzeichnungsdauer	max. 4 Std.
Rück/Vorspulzeit	270 sec für 3-Std.-Cassette

Mechanische Daten

Abmessungen (B×H×T)	460 × 155 × 370 mm
Gewicht	113 N (ca. 11,5 kg)
zul. Umgebungstemperatur	278 . . . 313 K (+ 5 . . . + 40° C)
Betriebslage	waagerecht

Anschlußdaten

Netzanschluß	220 V, 50 Hz (110, 127, 220, 240 V umschaltbar)
Leistungsaufnahme	45 Watt
Antenneneingang	DIN 45 325 (koaxial 75 Ω) Band I: VHF-Kanäle 2 . . . 4 Band III: VHF-Kanäle 5 . . . 12 Band U: UHF-Kanäle 21 . . . 69
Antennenausgang	DIN 45 325 (koaxial 75 Ω)
Antennenausgangsfrequenz	591,25 MHz ≙ K 36 (± 4 Kanäle)
Antennenausgangsspannung	3,2 mV an 75 Ohm
Mikrofon-Eingang	DIN 41 524 oder Klinkenbuchse 6,35 mm ∅ (– 67 dB/10 kΩ ≙ 0,35 mV/10 kΩ)
Audio-Anschluß	DIN 41 524
Eingang	– 20 dB/27 (47) kΩ ≙ 77,5 mV/27 (47) kΩ
Ausgang	– 6 dB/1 kΩ ≙ 388 mV/1 kΩ
Video/Audio-Anschluß	DIN 45 482
Video-Eingang	1 V_{ss}/75 Ω ± 6 dB
Video-Ausgang	1 V_{ss}/75 Ω
Audio-Eingang	– 18 dB/27 kΩ ≙ 100 mV/27 kΩ
Audio-Ausgang	0 dB/1 kΩ ≙ 775 mV/1 kΩ
Schaltspannung	12 V bei Wiedergabe
Betriebsspannung	12 V 50 mA
oder Video-Anschluß	BNC
Video-Eingang	1 V_{ss}/75 Ω ± 6 dB
Video-Ausgang	1 V_{ss}/75 Ω
Kamera-Anschluß	10pol Buchse
Kopfhörer-Anschluß	DIN 45 327 oder 6,35 mm ∅ Klinkenbuchse

Video

Signal/Rauschverhältnis	≧ 43 dB
Auflösung (horizontal)	≧ 250 Zeilen ≙ 3 MHz
Aussteuerung	automatisch

Audio

Frequenzumfang	70 . . . 10 000 Hz
Fremdspannungsabstand	≧ 40 dB
Aussteuerung	automatisch

Schaltuhr

Display	Fluoreszenz-Digital-Anzeige
Synchronisation	Quarz-Oszillator
Uhrzeit	24-Std.-Anzeige, Sekundenangabe, Tagesangabe
Vorprogrammierzeitraum	14 Tage
Anzahl der Speicherplätze	für max. 8 verschiedene Programme
Vorprogrammierarten	Ein- und Ausschalten, Tägliches u. wöchentliches Wiederholen
Aufnahmedauer	abhängig von verwendeter Cassette

Technical specifications:

System Data

TV Standard	CCIR – 625 lines – PAL
Recording system	VHS-PAL (helical scanning)
Video tape	1/2" (cassette)
Tape speed	23,39 mm/sec. (± 0,5 %)
Recording time	max. 4 hours
Rewind/forward wind time	270 sec. for 3 hour cassette

Mechanical Data

Dimensions (W×H×D)	460 × 155 × 370 mm
Weight	113 N (approx 11,5 kg)
Ambient temperature	278 . . . 313 K (+ 5 . . . + 40° C)
Operating position	horizontal

Connection Data

Mains connection	220 V, 50 Hz (110, 127, 220, 240 V adjustable)
Power consumption	45 Watts
Aerial input	DIN 45 325 (Coaxial 75 Ohm) Band I: VHF Channels 2 . . . 4 Band III: VHF Channels 5 . . . 12 Band U: UHF Channels 21 . . . 69
Aerial output	DIN 45 325 (Coaxial 75 Ohm)
Aerial output frequency	591,25 MHz ≙ K 36 (± 4 channels)
Aerial output voltage	3,2 mV to 75 Ohm
Microphone input	DIN 41 524 or Mic Jack 6,35 mm ∅ (– 67 dB/10 KOhm ≙ 0,35 mV/10 KOhm)
Audio connection	DIN 41 524
Input	– 20 dB/27 KOhm ≙ 77,5 mV/27 KOhm
Output	– 6 dB/1 KOhm ≙ 388 mV/1 KOhm
Video/Audio connection	DIN 45 482
Video input	1 V_{ss}/75 Ohm ± 6 dB
Video output	1 V_{ss}/75 Ohm
Audio input	– 18 dB/27 KOhm ≙ 100 mV/27 KOhm
Audio output	0 dB/1 KOhm ≙ 775 mV/1 KOhm
Voltage	12 V during playback
Operating Voltage	12 V 50 mA
or Video connection	BNC
Video input	1 V_{ss}/75 Ohm ± 6 dB
Video output	1 V_{ss}/75 Ohm
Camera connection	socket 10pin
Headphone connection	DIN 45 327 or jack socket 6,35 mm ∅

Video

Signal/noise proportion	≧ 43 dB
Dissolution (horizontal)	≧ 250 lines ≙ 3 MHz
Modulation	automatic

Audio

Frequency range	70 . . . 10 000 Hz
Voltage distance	≧ 40 dB
Modulation	automatic

Digital Clock

Display	Fluorescent digital display
Synchronisation	Quartz Oscillator
Time Display	24 hours display, second and day indicator
Programming range	14 days
Number of storage banks	max. 8 programmes
Pre-set modes	On and Off, daily and weekly repeat functions
Recording Time	depending on type of cassette

Ausbauhinweise

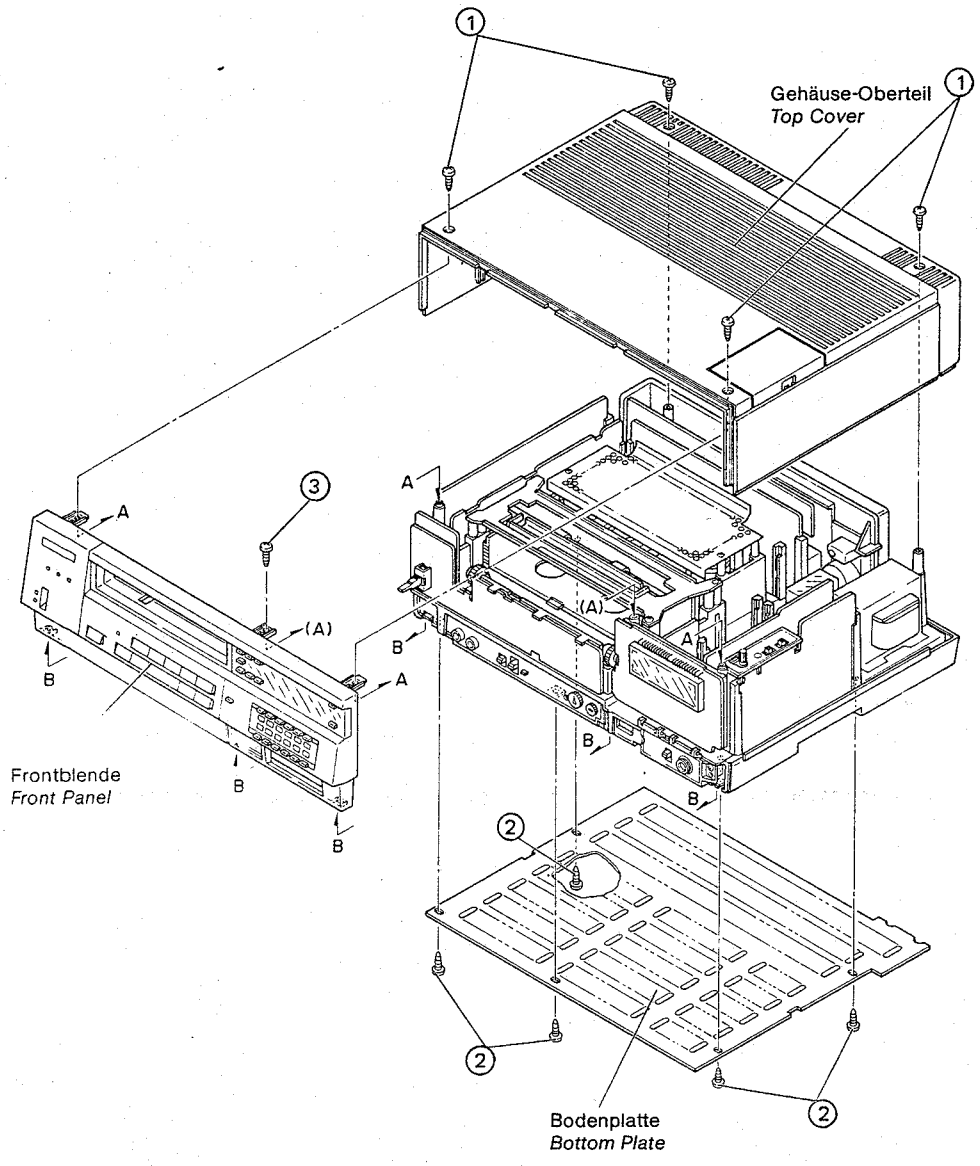
A: Gehäuse

1. Die vier Schrauben ① herausdrehen und das Gehäuse-Oberteil abnehmen.
2. Die fünf Schrauben ② herausdrehen und die Bodenplatte abnehmen.
3. Zum Abnehmen der Frontblende die Schraube ③ herausdrehen. Wie aus obiger Abbildung hervorgeht, ist die Frontblende zweimal an den Punkten A und dreimal an den Punkten B auf Plastikstützen eingehängt. Zum Abnehmen die Frontblende leicht anheben und an den Punkten A ausrasten, dann die Blende ein wenig nach außen bewegen und durch leichten Druck nach unten an den Punkten B aushängen. Danach läßt sich die Frontblende nach vorn abziehen.
4. Der Zusammenbau erfolgt in entgegengesetzter Reihenfolge der vorgenannten Schritte. Es ist darauf zu achten, daß die Laschen an den Punkten A und B richtig wieder einrasten.

Disassembly

A: External covers

1. Take out four screws ① and remove the top cover.
2. Take out five screws ② and remove the bottom plate.
3. To remove the front panel, take out one screw ③. As shown in above figure, the front panel is held by plastic post structures at two points A and three points B. Slightly raise the front panel to disengage points A, pull the panel outward by a small amount, then apply downward pressure to disengage points B. Afterwards, pull the panel gently outwards to remove.
4. To reassemble, reverse the above steps. Observe that points A and B are properly re-engaged.

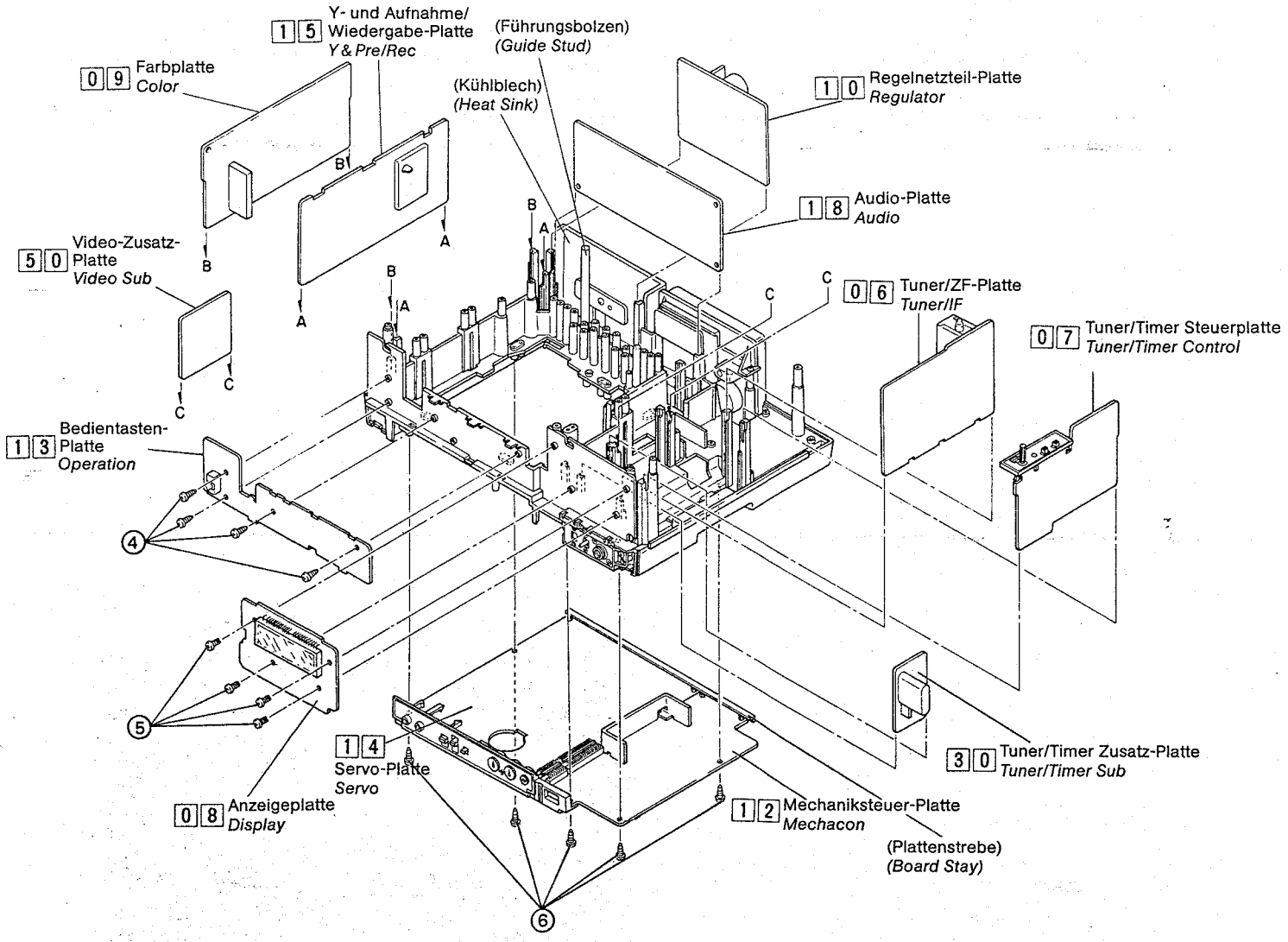


B: Leiterplatten

1. Bedienungstasten-Platte
   Die vier Schrauben ④ herausdrehen und die Bedienungstasten-Platte abnehmen.
2. Anzeige-Platte
   Die vier Schrauben ⑤ herausdrehen und die Anzeige-Platte abnehmen.
3. Servo- und Mechaniksteuerungs-Platten
   Die fünf Schrauben ⑥ herausdrehen und die Plattenstrebe von dem Chassis lösen.
4. Andere Platten
   Die übrigen Platten lassen sich durch Hochziehen aus den Chassisführungen herausnehmen (Farbplatte, Y- und Aufnahme/Wiedergabeplatte, Regelnetzteilplatte, Audioplatte, Video-Zusatzplatte, Tuner/ZF-Platte, T/T-Steuerplatte, T/T-Zusatzplatte).
5. Kühlblech
   Das Kühlblech mit den Leistungstransistoren kann durch Hochziehen von dem Führungsbolzen getrennt und dann abgenommen werden.

B: Circuit boards

1. Operation board assembly
   Take out four screws ④ and remove the operating board assembly.
2. Display board assembly
   Take out four screws ⑤ and remove the display board assembly.
3. Servo and Mechacon board assemblies
   Take out five screws ⑥ and remove the board stay from the chassis assembly.
4. Other board assemblies
   Remove the Color, Y & Pre/Rec, Regulator, Audio, Video Sub, Tuner/IF, Tuner Timer Control, and Tuner/Timer Sub board assemblies by pulling them upward from the chassis assembly board guides.
5. Heat sink
   The heat sink, with power transistor and servo power transistor boards, can be removed by pulling it upward from the guide stud of the chassis assembly.



Hinweise zur Inbetriebnahme und Wartung

1. Änderung des Videorecorder-Sendekanals

Der eingebaute HF-Modulator des Videorecorders ist werkseitig auf Kanal 36 (UHF) eingestellt. Falls dieser Kanal oder die direkt benachbarten Kanäle am Aufstellungsort bereits durch einen Fernsehsender belegt sind, muß für den Videorecorder ein anderer Kanal gewählt werden, um gegenseitige Bild- und Tonstörungen zu vermeiden. Der HF-Modulator ist von der Geräterückseite her zugänglich (siehe Abb. 1).

1.1 Testbildgenerator im Videorecorder einschalten, angeschlossenes Fernsehgerät abstimmen.

1.2 Den Abstimmkern des Modulators in kleinen Schritten verdrehen.

Achtung: Kern nicht zu weit verdrehen; läßt sich sonst nicht wieder zurückdrehen oder fällt aus dem Trimmer.

1.3 Fernsehgerät entsprechend nachstimmen.

1.4 Vorgang wiederholen, bis genügend Abstand zum belegten Kanal (keine Störungen mehr) ist.

2. Wartung und Instandhaltung

Um eine optimale Funktion und größtmögliche Betriebssicherheit des Videorecorders sicherzustellen, werden nachfolgende Wartungsarbeiten empfohlen.

2.1 Reinigung (siehe Abb. 3 und 4)
Zur Reinigung ist ein alkoholgetränktes fusselfreies Tuch oder Gaze zu verwenden (Industriealkohol).

A: Bandlaufsystem

1. Die nachstehend genannten Teile sind jeweils nach 500 Betriebsstunden zu reinigen.

   Abwickelführungsstift
   Cue-Kopf (Fühlhebelstift)
   Abwickelführungsbolzen
   Gesamtlöschkopf
   Abwickelspannrolle
   Abwickelführungsrolle
   Abwickelschrägführungsbolzen (Führungsbolzen-Einheit)
   Videoköpfe und Kopftrommel-System
   Bürsteneinheit
   Kollektor
   Aufwickelschrägführungsbolzen (Führungsbolzen-Einheit)
   Aufwickelführungsrolle
   Audio/Synchronkopf und Audio-Löschkopf
   Aufwickelführungsbolzen
   Gummiandruckrolle
   Bandantriebswelle

2. Da die zuvor angeführten Teile direkt mit dem Videoband in Kontakt kommen, neigen sie dazu, Staubpartikel aufzunehmen. Wird der Staub über eine längere Zeit nicht entfernt, kann dies eine Beschädigung des Videobandes und der oben genannten mechanischen Teile zur Folge haben.

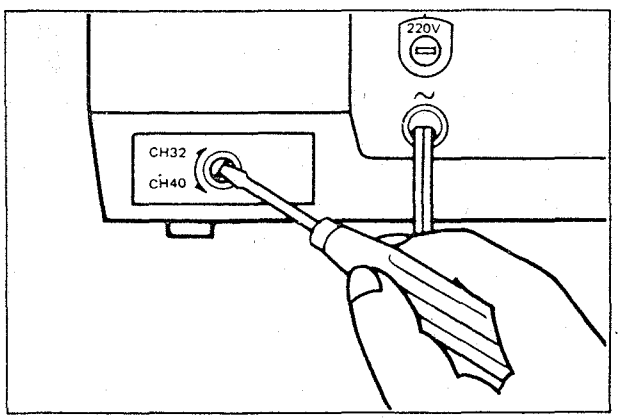


Abb./Fig. 1 Modulator-Einstellung
Modulator adjustment

Set-Up and Servicing Information

1. Changing the video recorder transmission channel

The HF modulator installed in the video recorder has been set at the factory for UHF channel 36. If the video recorder is to be used in an area where this channel, or one immediately adjacent, is already being used for broadcast transmission, another channel must be programmed into the video recorder to avoid mutual video and audio cross-talk. The HF modulator is located on the rear side of the unit (see Fig. 1).

1.1 Switch on the test pattern generator in the video recorder and tune the TV receiver being used.

1.2 Turn the trimming core in the modulator in small increments.

Important: Do not turn core too far, as it will fall out of the trimmer or cannot be turned back.

1.3 Retune the TV receiver accordingly.

1.4 Repeat the procedure until there is sufficient clearance to the channel being used (no interference).

2. Periodic maintenance

The following procedures are recommended for maintaining optimum performance and reliability of this video cassette recorder.

2.1 Cleaning (see Fig. 3 and 4)
For cleaning, use a lint-free cloth or gauze dampened with alcohol.

A: Tape transport system

1. The following components should be cleaned after every 500 hours of use.
   Supply guide pin
   Cue head (Tension pole)
   Supply guide pole
   Full erase head
   Supply impedance roller
   Supply guide roller
   Supply slant pole (Supply pole base assembly)
   Video head and Drum system
   Brush ass'y
   Commutator
   Take-up slant pole (Take up slant pole assembly)
   Take-up guide roller
   Audio/control head and Audio erase head
   Take-up guide pole
   Pinch roller
   Capstan shaft

2. Since above parts come in direct contact with video tape, they tend to collect dust particles. If allowed to accoumulate, dust may lead to damage to the video tape and above parts.

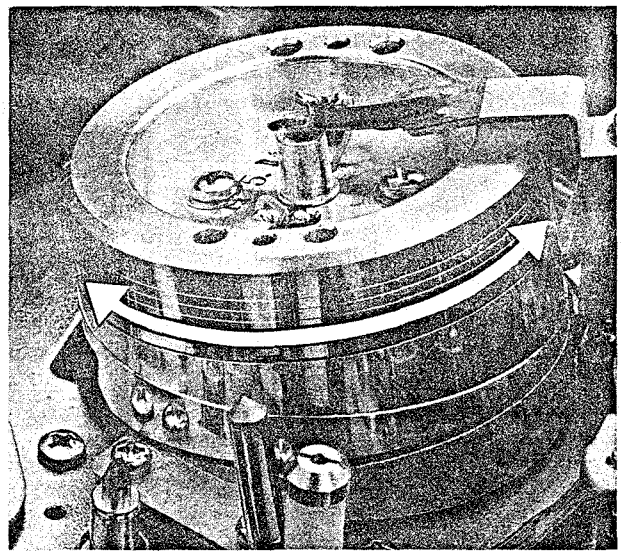


Abb./Fig. 2 Reinigung der Kopftrommel
Head drum cleaning

3. Nach der Reinigung mit Alkohol müssen alle Teile vollständig trocken sein, bevor das Videoband eingesetzt wird.

Achtung:
Beim Reinigen der beiden Videoköpfe an der oberen Kopftrommel ist darauf zu achten, daß dabei nicht in Vertikalrichtung gewischt wird. Den Reinigungsvorgang nur durch sachtes Hin- und Herwischen in Bandlaufrichtung durchführen (siehe Abb. 2). Dabei ganz sorgfältig verfahren, da sie leicht beschädigt werden können. Zum Reinigen der Videoköpfe, des A/W-Synchronkopfes und der Löschköpfe ein mit Alkohol befeuchtetes, fusselfreies Tuch verwenden.

B: Spulentellerantriebssystem

Die nachstehend angeführten Teile sind jeweils nach 1000 Betriebsstunden zu reinigen.

– Chassisoberseite –
- Wickelmotor
- Wickelzwischenrad
- Abwickelspulenteller
- Abwickel-Hauptbremse
- Aufwickelspulenteller
- Aufwickel-Hauptbremse
- Aufwickelkupplung
- Aufwickelzwischenrad

– Chassisunterseite –
- Bandantriebsmotor
- Bandantriebsriemen
- Bandantriebsschwungmasse
- Riemen der Aufwickelkupplung
- Aufwickelkupplung
- Zwischenrad des Einfädelgetriebes
- Riemen des Einfädelgetriebes
- Einfädelmotor

– Cassettenaufnahme –
- Rollen der Einrollmechanik
- Riemen für Antrieb der Cassettenaufnahme
- Motor für Antrieb der Cassettenaufnahme

2. Die oben angeführten rotierenden Teile sind Teile aus Gummi oder kommen mit Teilen aus Gummi in Kontakt und neigen dazu, Gummistaub anzuziehen und anzusammeln. Wird der Staub über eine längere Betriebszeit hinweg nicht entfernt, so wird dadurch die Funktion dieser Teile beeinträchtigt.

3. Beim Reinigen von Gummiteilen ist eine übermäßige Anwendung von Alkohol zu vermeiden.

2.2 Schmierung
Die nachstehend angeführten Teile sind alle 2000 Betriebsstunden mit harz- und säurefreiem Öl zu ölen.
1. Die Welle des Aufwickelspulentellers
2. Die Welle des Abwickelspulentellers

Nach dem Reinigen der vorerwähnten Wellen mit Alkohol sind diese mit ein oder zwei Tropfen Öl zu versehen.

Achtung: Nicht zuviel Öl auftragen.

3. After cleaning with alcohol, allow the parts to dry thoroughly before using a cassette tape.

NOTE:
When cleaning the two video heads on the upper drum, do not clean them with a vertical stroke.
Use only a gentle back and forth motion in the direction of the tape path (see Fig. 2).
Use care since they are easily damaged.
When cleaning video heads, A/C head and erase heads, use a lint-free cloth dampened with alcohol.

B: Reel drive system

1. The following components should be cleaned after every 1,000 hours of use.

– Upper section –
- Reel motor
- Reel idler
- Supply reel disk
- Supply main brake
- Take-up reel disk
- Take-up main brake
- Take-up clutch
- Take-up idler

– Bottom section –
- Capstan motor
- Capstan belt
- Capstan flywheel
- Take-up clutch belt
- Take-up clutch
- Loading gear pulley
- Loading belt
- Loading motor

– Cassette housing section –
- Rollers of roller assembly
- Cassette belt
- Cassette motor

2. The above revolving parts are of rubber or come in direct contact with rubber parts.
Rubber dust can accumulate and interfere with proper operation.

3. Avoid using excessive alcohol when cleaning rubber parts.

2.2 Lubrication
The following components should be lubricated with resin or acid-free oil after every 2,000 hours of use.
1. Shaft of the take-up reel disk
2. Shaft of the supply reel disk

After cleaning above shafts with alcohol, lubricate these shafts with one or two drops of oil.

Note: Do not over lubricate.

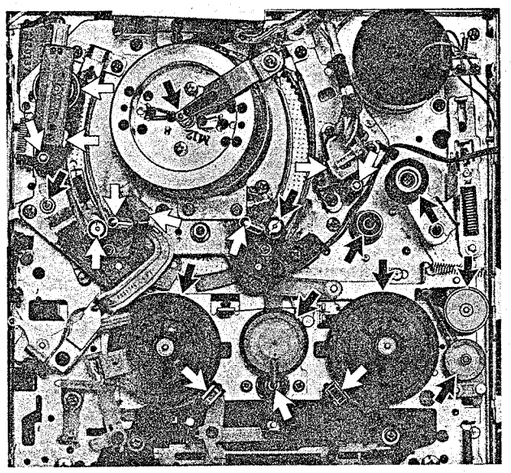


Abb./Fig. 3 Reinigung – Chassisoberteil
Cleaning – Top view

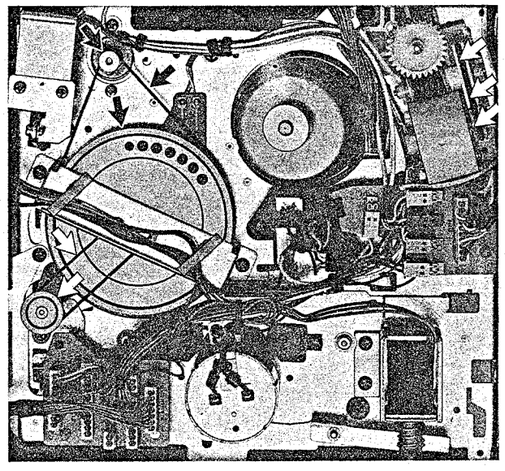
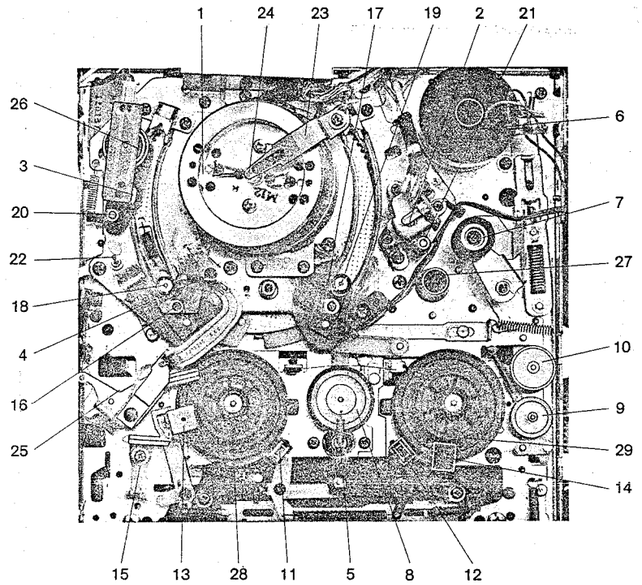


Abb./Fig. 4 Reinigung – Chassisunterseite
Cleaning – Bottom view

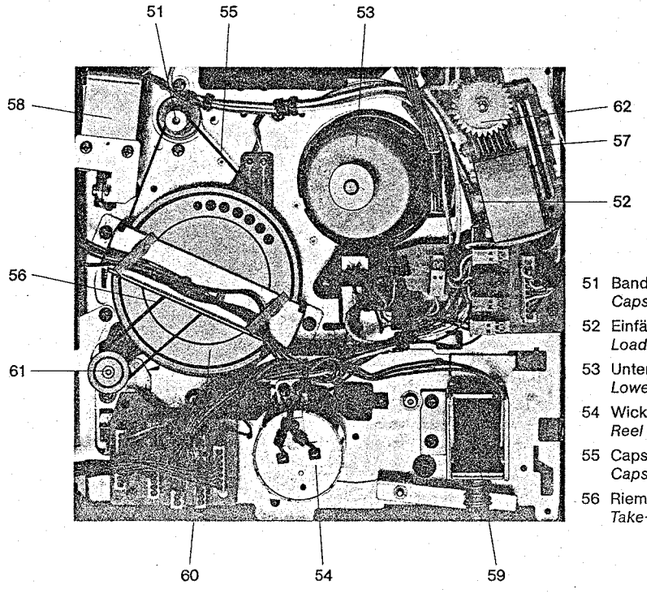
Darstellung der wichtigsten mechanischen Teile
Layout of main mechanical parts

A: Draufsicht und Teilebezeichnung
Top view and parts identification



1 Obere Kopftrommel
Upper drum ass'y
2 Audio/Kontrollkopf
Audio/control head ass'y
3 Gesamtlöschkopf
Full erase head
4 Cue-Kopf (Fühlhebelstift)
Cue head (Tension pole)
5 Wickelmotor
Reel motor ass'y
6 Bandantriebsmotor
Capstan motor ass'y
7 Gummiandruckrolle
Pinch roller ass'y
8 Wickelzwischenrad
Reel idler ass'y
9 Aufwickelzwischenrad
Take-up idler ass'y
10 Aufwickelkupplung
Take-up clutch ass'y
11 Abwickelhauptbremse
Supply main brake
12 Aufwickelhauptbremse
Take-up main brake
13 Einfädelzug-Bremse
Loading tension brake
14 Aufwickelzug-Bremse
Take-up back tension brake
15 Bandzug-Bremsband
Tension band ass'y
16 Grundplatte für Abwickelführungsstift
Supply pole base ass'y
17 Grundplatte für Aufwickelführungsstift
Take-up pole base ass'y
18 Abwickelführungsrolle
Supply guide roller ass'y
19 Aufwickelführungsrolle
Take-up guide roller ass'y
20 Abwickelführungsbolzen
Supply guide pole
21 Aufwickelführungsbolzen
Take-up guide pole
22 Abwickelführungsstift
Supply guide pin
23 Bürsteneinheit
Brush ass'y
24 Kollektor
Commutator
25 Fühlhebel
Tension arm
26 Spannrolle
Impedance roller ass'y
27 Bandantriebsachse
Capstan shaft
28 Abwickelspulenteller
Supply reel disk ass'y
29 Aufwickelspulenteller
Take-up reel disk ass'y

B: Unteransicht und Teilebezeichnung
Bottom view and parts identification



51 Bandantriebsmotor
Capstan motor ass'y
52 Einfädelmotor
Loading motor ass'y
53 Untere Kopftrommeleinheit
Lower drum ass'y
54 Wickelmotor
Reel motor ass'y
55 Capstan-Riemen
Capstan belt
56 Riemen für Aufwickelkupplung
Take-up clutch belt
57 Riemen für Einfädelung
Loading belt
58 GA-Magnet
Pinch roller solenoid
59 Bremsen-Magnet
Brake solenoid
60 Capstan-Schwungmasse
Capstan flywheel ass'y
61 Aufwickelkupplung
Take-up clutch ass'y
62 Einfädelgetriebe
Loading gear ass'y

Wartungs-
wichtigste

In der nachfolgende
disch auszuwechsel
aufgeführt.

○ Kontrollieren und

● Auswechseln

Nr.	Bezeichn *Name*
1	Obere Kop *Upper dru*
23/24	Bürsteneir *Brush ass*
–	Motor für *Cassette*
–	Riemen fü *Cassette*
–	Rolleneinh *Roller ass*
10	Aufwickel- *Take-up cl*
56	Riemen fü *Take-up cl*
9	Aufwickel *Take-up id*
5	Wickelmo *Reel moto*
8	Wickel-Zw *Reel idler*
51	Bandantrie *Capstan m*
55	Capstan-R *Capstan b*
52	Einfädelm *Loading m*
57	Riemen fü *Loading b*
2	Audio/Kor *Audio/con*
15	Bandzugb *Tension ba*
28	Abwickels *Supply ree*
29	Aufwickels *Take-up re*
13	Bremspols *Loading te*
14	Bremspols *Take-up ba*
7	Gummian *Pinch rolle*
4	Cue-Kopf *Cue head*
3	Gesamtlös *Full erase*

Auch wenn das Ge
die Reinigung, die S
zwei Jahre vorgenor

Wartungs-Tabelle der wichtigsten mechanischen Teile

In der nachfolgenden Tabelle sind die Teile des Gerätes, die periodisch auszuwechseln sind und die entsprechenden Zeitintervalle, aufgeführt.

○ Kontrollieren und falls notwendig, auswechseln

● Auswechseln

Service schedule for main components

The following chart lists the parts which should receive periodic servicing at the recommended intervals.

○ Check and replace if necessary

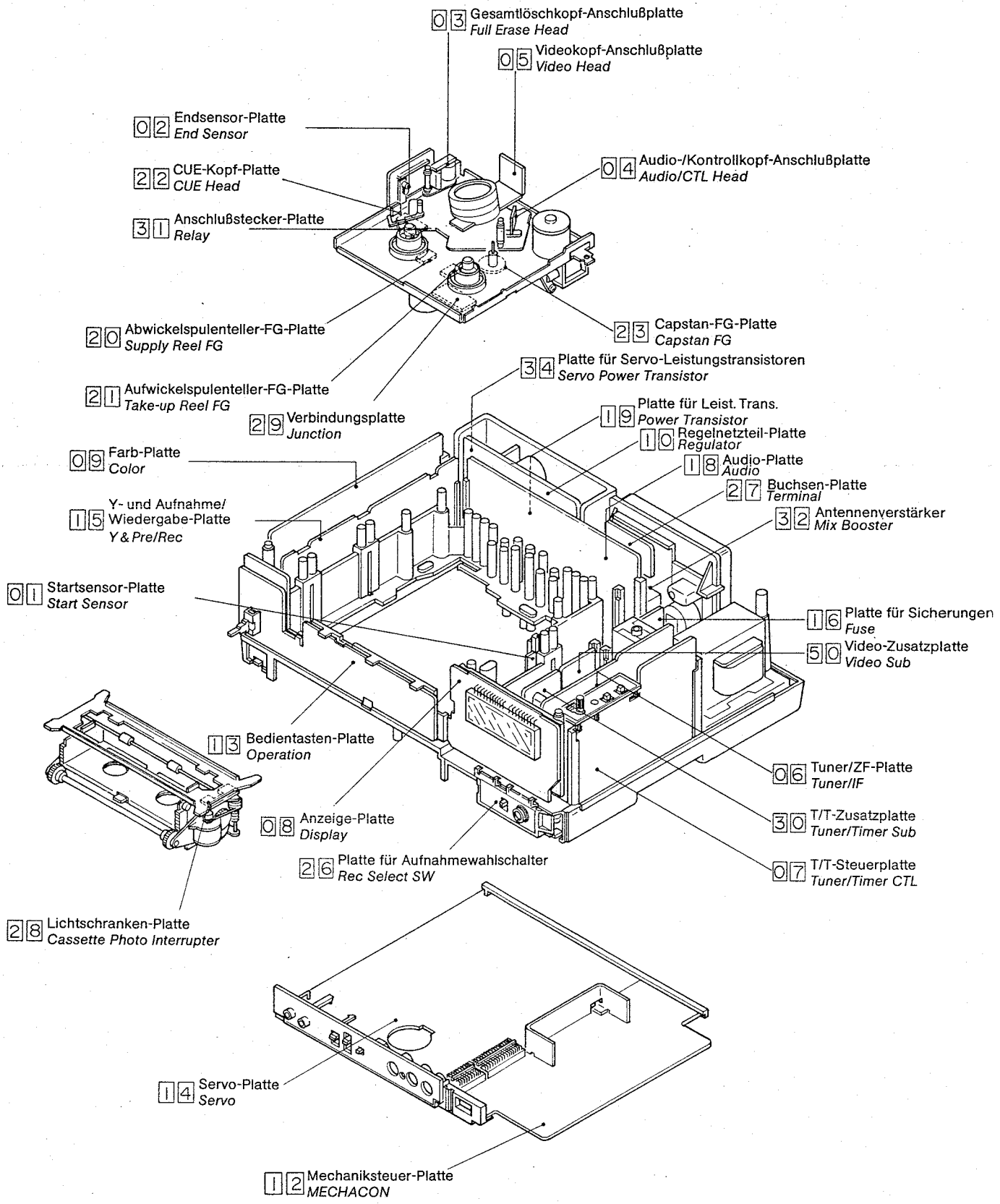
● Replace

Nr.	Bezeichnung / *Name* — Betriebsstunden / *Operating hours*	1000	2000	3000	4000	5000
1	Obere Kopftrommel *Upper drum assembly*	○	●	○	●	○
23/24	Bürsteneinheit/Kollektor *Brush assembly and commutator*		●		●	
–	Motor für Antrieb der Cassettenaufnahme *Cassette motor assembly*			●		
–	Riemen für Antrieb der Cassettenaufnahme *Cassette belt*		●		●	
–	Rolleneinheit (der Cassettenaufnahme) *Roller assembly (for cassette housing)*		●		●	
10	Aufwickel-Kupplung *Take-up clutch assembly*		●		●	
56	Riemen für Aufwickel-Kupplung *Take-up clutch belt*		●		●	
9	Aufwickelzwischenrad *Take-up idler assembly*		●		●	
5	Wickelmotor *Reel motor assembly*		●		●	
8	Wickel-Zwischenrad *Reel idler assembly*		●		●	
51	Bandantriebsmotor *Capstan motor assembly*		●		●	
55	Capstan-Riemen *Capstan belt*		●		●	
52	Einfädelmotor *Loading motor*			●		
57	Riemen für Einfädelung *Loading belt*		●		●	
2	Audio/Kontrollkopf-Einheit *Audio/control head assembly*			●		
15	Bandzugbremsband *Tension band assembly*		●		●	
28	Abwickelspulenteller *Supply reel disk assembly*			●		
29	Aufwickelspulenteller *Take-up reel disk assembly*			●		
13	Bremspolster für Einfädelzugbremse *Loading tension brake pad*		●		●	
14	Bremspolster für Aufwickelzugbremse *Take-up back tension brake pad*		●		●	
7	Gummiandruckrolle *Pinch roller assembly*			●		
4	Cue-Kopf *Cue head*					●
3	Gesamtlöschkopf *Full erase head*					●

Auch wenn das Gerät für längere Zeit nicht benutzt wurde, sollte die Reinigung, die Schmierung und der Austausch der Riemen alle zwei Jahre vorgenommen werden.

Even if the unit is not used frequently, cleaning, lubrication and replacement of the belts should be undertaken every 2 years.

Lage der Leiterplatten · Circuit board location

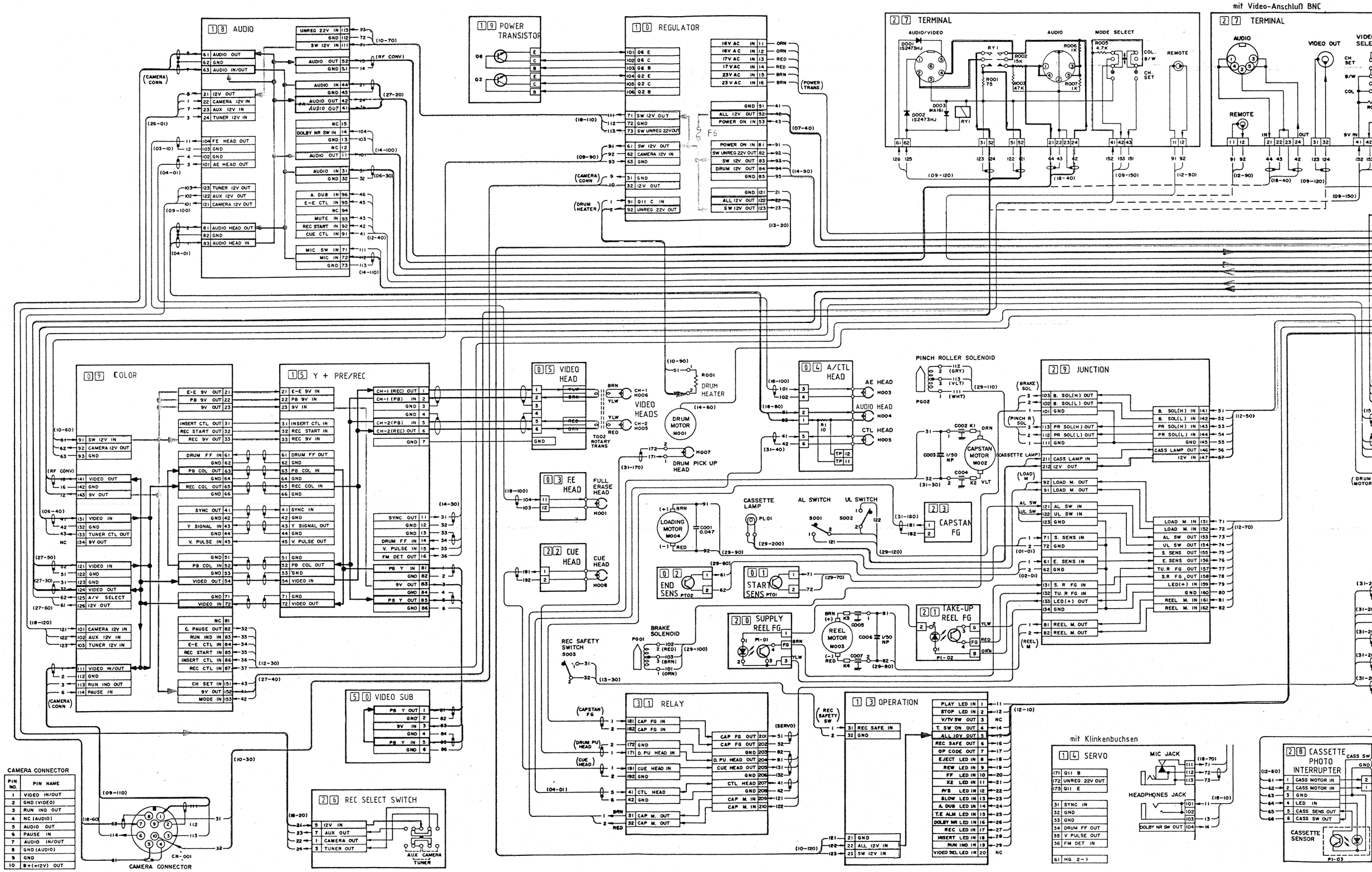


Übersetzungen wichtiger Abkürzungen und Ausdrücke
Key to abbreviations

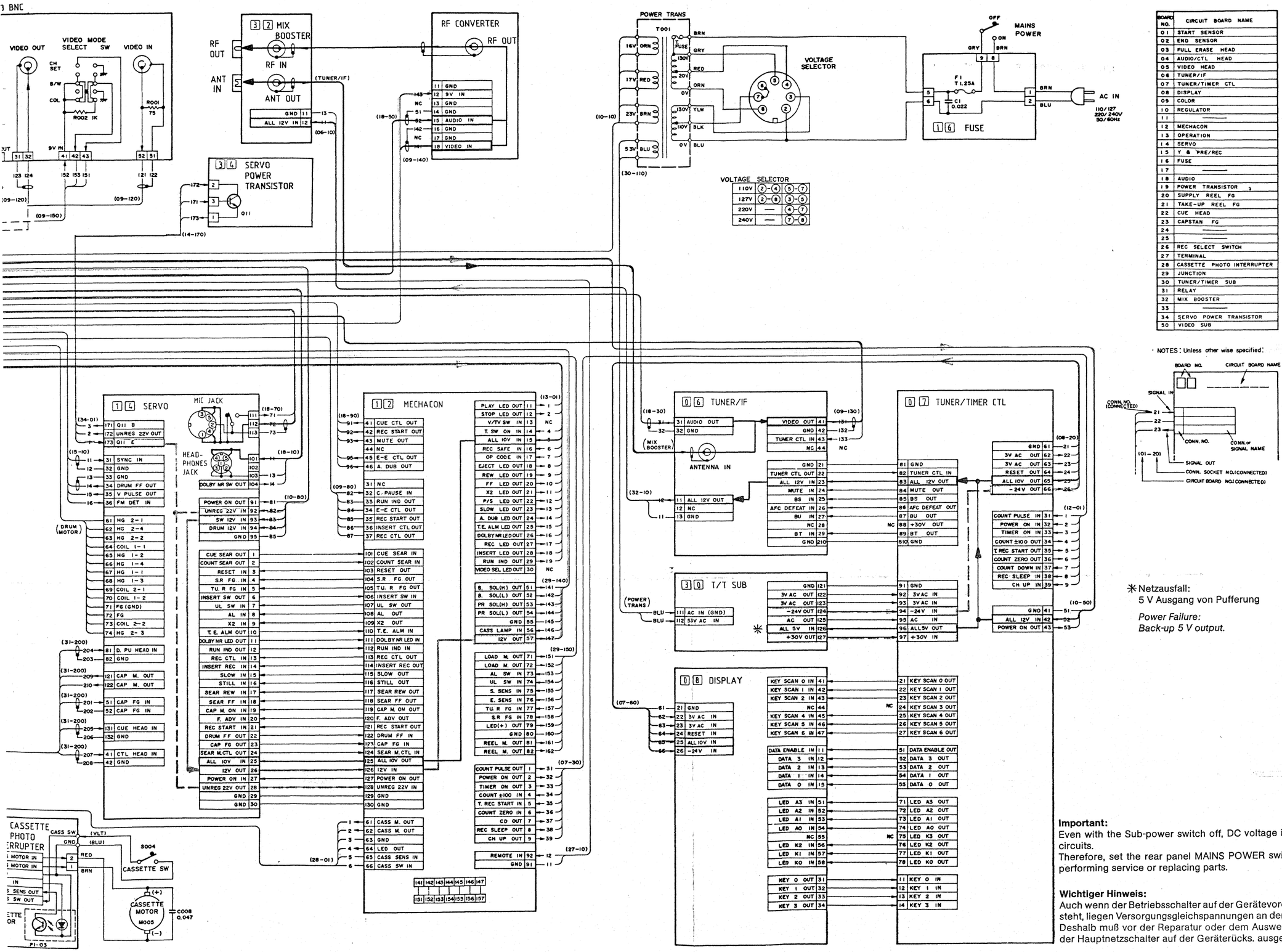
AC	Wechselstrom, Wechselspannung	Alternating Current
ACC	Automatische Farbregelung	Automatic Color Control
A/CTL	Audio/Kontrollkopf	Audio/Control
A. DUB	Nachvertonung	Audio Dubbing
AE	Audio-Löschkopf	Audio Erase
AFC	Automatische Frequenzsteuerung	Automatic Frequency Control
AGC	Automatische Verstärkungsregelung	Automatic Gain Control
AL	Nach Einfädeln	After Loading
ALL	Immer, ständig	Always
AMP	Verstärker	Amplifier
ANT	Antenne	Antenna
APC	Automatische Phasensteuerung	Automatic Phase Control
AR	Nach Aufnahme	After Recording
AUX	Reserveeingang	Auxiliary
B	Basis	Base
BAL	Symmetrie	Balance
BLK	Schwarz	Black
BLU	Blau	Blue
BPF	Bandpaßfilter	Band-Pass Filter
BRN	Braun	Brown
B. SOL	Bremsmagnet	Brake Solenoid
B/W	Schwarz/Weiß	Black and White
CAP	Bandantrieb	Capstan
CARR	Träger	Carrier
CASS	Cassette	Cassette
CD	Abwärtszählen	Count Down
CF	Keramikfilter	Ceramic Filter
CH	Kanal	Channel
COL	Farbe	Color (Colour)
COMP	Vergleichsstufe	Comparator
CONN	Steckverbinder	Connector
CONV	Umsetzer	Converter
COUNT SEA	Memory-Suchlauf	Counter Search
C. PAUSE	Kamera-Pause	Camera Pause
C. SW	Cassettenschalter	Cassette Switch
CTL	Steuerung	Control
DAC	Digital-Analog-Wandler	Digital to Analog Converter
DEMOD	Demodulator	Demodulator
DET	Auswerter	Detector
DL	Verzögerungsleitung	Delay Line
DOC	Drop-out Kompensator	Drop Out Compensator
D. PU	Abtaster für Kopftrommel-Magnet	Drum Pick-up
DRUM FF	Kopftrommel Flip-Flop	Drum Flip-Flop
EF	Emitterfolger	Emitter Follower
EMPHA	Emphasis	Emphasis
EQ	Entzerrer	Equalizer
E. SENS	Endsensor	End Sensor
E. SW	Elektronischer Schalter	Electronic Switch
F	Sicherung	Fuse
F. ADV	Einzelbildbetrieb	Frame Advance
FE	Gesamtlöschkopf	Full Erase
FF	Schneller Vorlauf	Fast Forward
	Flip-Flop	Flip-Flop
FG	Frequenz-Generator	Frequency Generator
FM	Frequenzmodulation	Frequency Modulation
FR	Gesamtneuaufnahme	Full Recording
FWD	Vorwärts	Forward
GEN	Generator	Generator
GND	Masse	Ground
GRN	Grün	Green
GRY	Grau	Gray
HG	Hall-Generator	Hall Generator
HPF	Hochpaßfilter	High-Pass Filter
ID	Ident-Impuls	Identification
IF	Zwischenfrequenz	Intermediate Frequency
IND	Anzeige	Indicator
INV	Inverter	Inverter
L	Low-Pegel	Low
LED	Leuchtdiode	Light Emitting Diode
LOAD	Einfädeln	Loading
LPF	Tiefpaßfilter	Low-Pass Filter
M.	Motor	Motor
MDA	Motorverstärker	Motor Drive Amplifier
MECHACON	Mechaniksteuerung	Mechanism Control
MIC	Mikrofon	Microphone
MIX	Mischer	Mixer, Mixing
MMV	Monomultivibrator	Monostable Multivibrator
MOD	Modulator	Modulator
MUTE	Stummabstimmung	Muting

NC	nicht angeschlossen	Non Connection
NON-LIN	nicht linear	Non-Linear
OP	Betrieb	Operation
ORN	Orange	Orange
OSC	Oszillator	Oscillator
PB	Wiedergabe	Playback
PI	Lichtschranke	Photo Interrupter
PR	Gummiandruckrolle	Pinch Roller
P/S	Pause/Standbild	Pause/Still
P. TR	Leistungstransistor	Power Transistor
PU	Abtasten, Abfragen	Pick-up
PWB	Leiterplatte	Printed Wiring Board
REC	Aufnahme	Recording (Record)
RED	Rot	Red
REG	Regelung	Regulator
REV	entgegengesetzt	Reverse
REW	Rücklauf	Rewind
RF	Hochfrequenz	Radio Frequency
R/P	Aufnahme/Wiedergabe	Record/Playback
RT	rotierender Transformator	Rotary Transformer
RUN IND	Bandlaufanzeige	Running Indicator
RY	Relais	Relay
SAFE	Sicherheit	Safety
SEAR	Suchen	Search
SEC	Sekunde	Second
SEL	Auswahl	Select
SENS	Sensor	Sensor
SF	Sourcefolger	Source Follower
SOL	Magnet	Solenoid
S. R	Abwickelspulenteller	Supply Reel
S. SENS	Start-Sensor	Start Sensor
S. SEP	Synchronsignal-Abtrennstufe	Sync Separator
SW	Schalter	Switch
T. E ALM	Alarm bei Bandende	Tape End Alarm
TP	Testpunkt	Test Point
TR	Transistor	Transistor
TRANS	Transformator	Transformer
T. REC	Schaltuhr-Aufnahme	Timer Record
T. SW	Schaltuhr-Schalter	Timer Switch
T/T	Tuner/Schaltuhr	Tuner/Timer
TU	Aufwickeln	Take-up
TU. R	Aufwickelspulenteller	Take-up Reel
UL	Entladen, ausgefädelt	Unloading
V	Volt	Volt
VCO	Spannungsgesteuerter Oszillator	Voltage Controlled Oscillator
VLT	Violett	Violet
V. PULSE	Vertikalimpuls	Vertical Pulse
V. SEL	Videosignal Anwahl	Video Select
V/T	Video/Fernsehen	Video/Television
V/U	VHF/UHF	VHF/UHF
VXO	Steuerbarer Quarzoszillator	Variable Crystal Oscillator
W	Watt	Watt
W/D	Weiß/Schwarz	White and Dark
WHT	Weiß	White
Y	Helligkeitssignal (Y)	Luminance
YLW	Gelb	Yellow

Gesamtverdrahtungsplan · Overall wiring diagram



PIN NO.	PIN NAME
1	VIDEO IN/OUT
2	GND (VIDEO)
3	RUN IND OUT
4	NC (AUDIO)
5	AUDIO OUT
6	PAUSE IN
7	AUDIO IN/OUT
8	GND (AUDIO)
9	GND
10	B+(+12V) OUT



BOARD NO.	CIRCUIT BOARD NAME
01	START SENSOR
02	END SENSOR
03	FULL ERASE HEAD
04	AUDIO/CTL HEAD
05	VIDEO HEAD
06	TUNER/IF
07	TUNER/TIMER CTL
08	DISPLAY
09	COLOR
10	REGULATOR
11	———
12	MECHACON
13	OPERATION
14	SERVO
15	Y & PRE/REC
16	FUSE
17	———
18	AUDIO
19	POWER TRANSISTOR
20	SUPPLY REEL FG
21	TAKE-UP REEL FG
22	CUE HEAD
23	CAPSTAN FG
24	———
25	———
26	REC SELECT SWITCH
27	TERMINAL
28	CASSETTE PHOTO INTERRUPTER
29	JUNCTION
30	TUNER/TIMER SUB
31	RELAY
32	MIX BOOSTER
33	———
34	SERVO POWER TRANSISTOR
50	VIDEO SUB

· NOTES : Unless other wise specified.

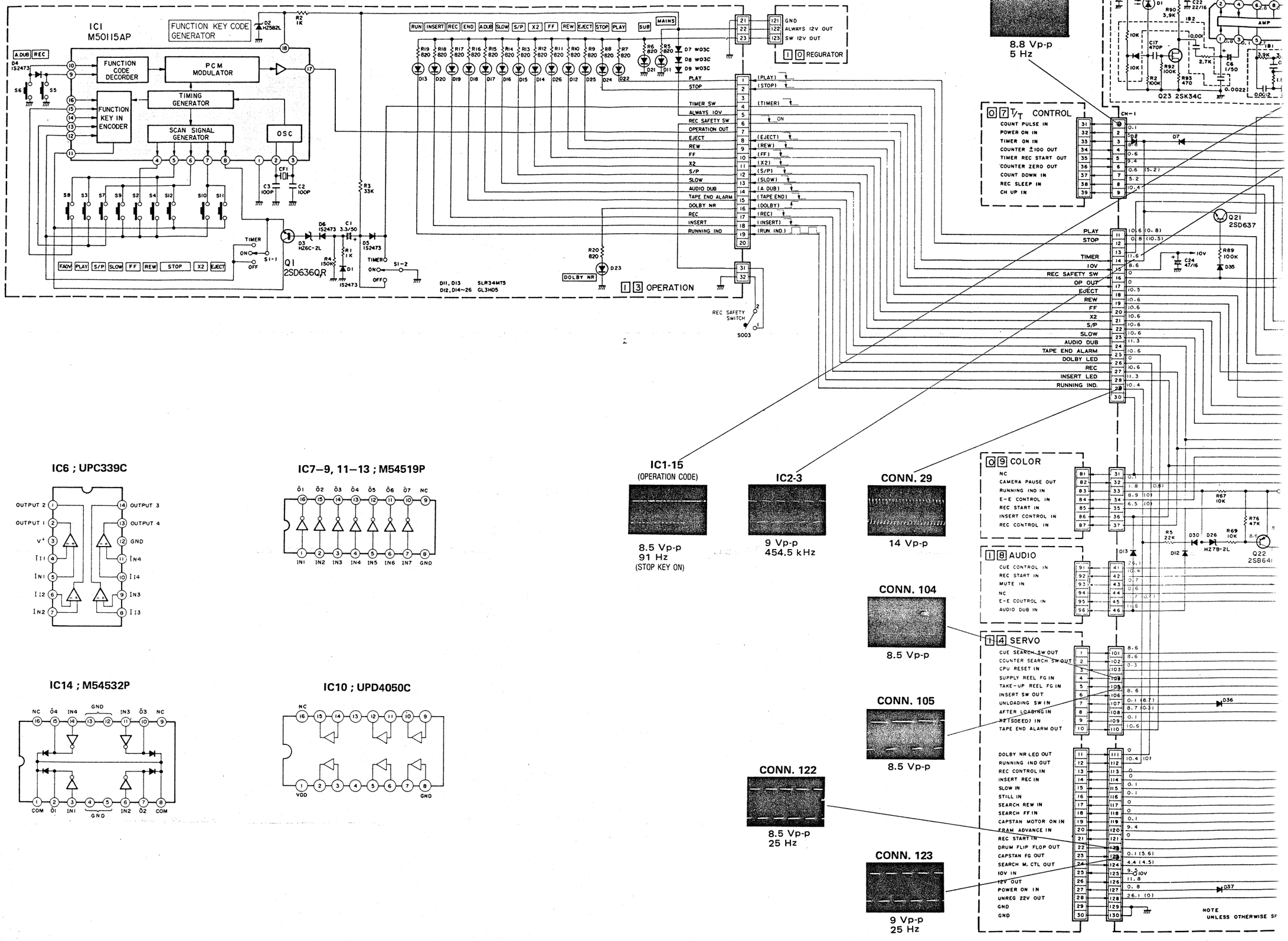
✳ Netzausfall:
5 V Ausgang von Pufferung

Power Failure:
Back-up 5 V output.

Important:
Even with the Sub-power switch off, DC voltage is supplied to the circuits.
Therefore, set the rear panel MAINS POWER switch to off before performing service or replacing parts.

Wichtiger Hinweis:
Auch wenn der Betriebsschalter auf der Gerätevorderseite auf „Aus" steht, liegen Versorgungsgleichspannungen an den Schaltungen an. Deshalb muß vor der Reparatur oder dem Auswechseln von Teilen der Hauptnetzschalter auf der Geräterücks. ausgeschaltet werden.

Mechaniksteuer- und Bedienteil-Schaltungen (Ausführung A) · Mechacon and Operation circuits (Version A)



IC6 ; UPC339C

IC7–9, 11–13 ; M54519P

IC14 ; M54532P

IC10 ; UPD4050C

SERIAL TO PARALLEL DECORDER

IC1 M51014L

IC2 M50127AP

IC3 TMS1025N2LL

IC4 TMS1025N2LL

IC5 UPD553C-185 or 174

IC6 UPC339C

IC10 UPD4050C

INPUT EXPANDER

OUTPUT EXPANDER

CPU

Q1~Q9 2SA1020

Q10 2SC2655

Q11 2SC2655

Q12 2SB641

Q13 2SB641

Q14 2SC2877

Q15 2SC2877

Q16 2SD637

Q17 2SD637

Q18 2SC3070

Q19 2SC3070

Q20 2SD637

Q21 2SD637

Q22 2SB641

JUNCTION

BRAKE SOLENOID

PINCH SOLENOID

CASSETTE LAMP

LOADING MOTOR (DC RESISTANCE:18Ω)

AFTER LOADING SW.

UNLOADING SW.

START SENSOR

END SENSOR

T.U. REEL FG

S. REEL FG

REEL MOTOR (DC RESISTANCE:16.9Ω)

CASSETTE MOTOR (DC RESISTANCE:18Ω)

CASSETTE PIST INTRRUPTER

CASSETTE SW.

REMOT CONTROL UNIT

CH UP

REC

A.DUB

PLAY

PAUSE STILL

STOP

FF

REW

IC5-33

8.5 Vp-p

IC5-1

4.8 Vp-p
400 kHz

IC5-12

8.8 Vp-p

IC5-15

9.2 Vp-p

IC4-39

9.8 Vp-p

IC5-39

8.5 Vp-p
REMOTE STOP KEY ON

IC6-6

8.8 Vp-p
REMOTE STOP KEY ON

NOTE: Unless otherwise specified;
1. Diode are 1S2473.
2. All resistance values are in ohms, 1/8W.
3. All capacitance values are in μF.
   ±; Electrolytic
   ⊣⊢; Ceramic
4. IC7–9, 11–3 ; M54519P
   IC14 ; M54532P
   —▷○—C-MOS (Open collecter)
5. IC10 ; UPD4050C
   —▷—C-MOS (Buffer converter)

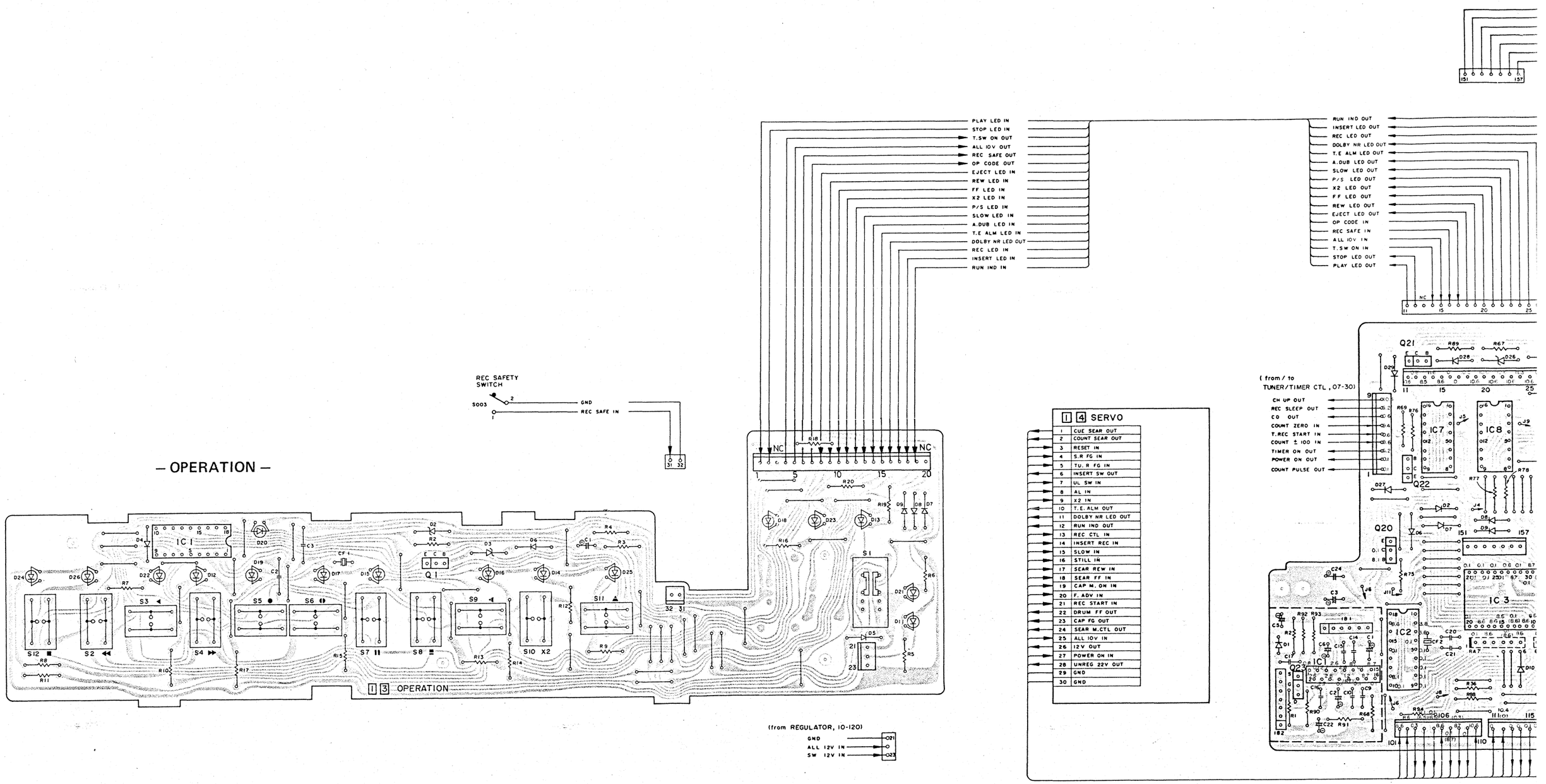
Alle Gleichspannungen sind mit einem Digitalvoltmeter gemessen bei Wiedergabe. () bei STOP-Betrieb.

All DC voltages are measured with a digital voltmeter at playback. () at STOP mode.

Sicherheitsbauteile nur gegen Original-Ersatzteile auswechseln!

Replace safety components only with original spare parts!

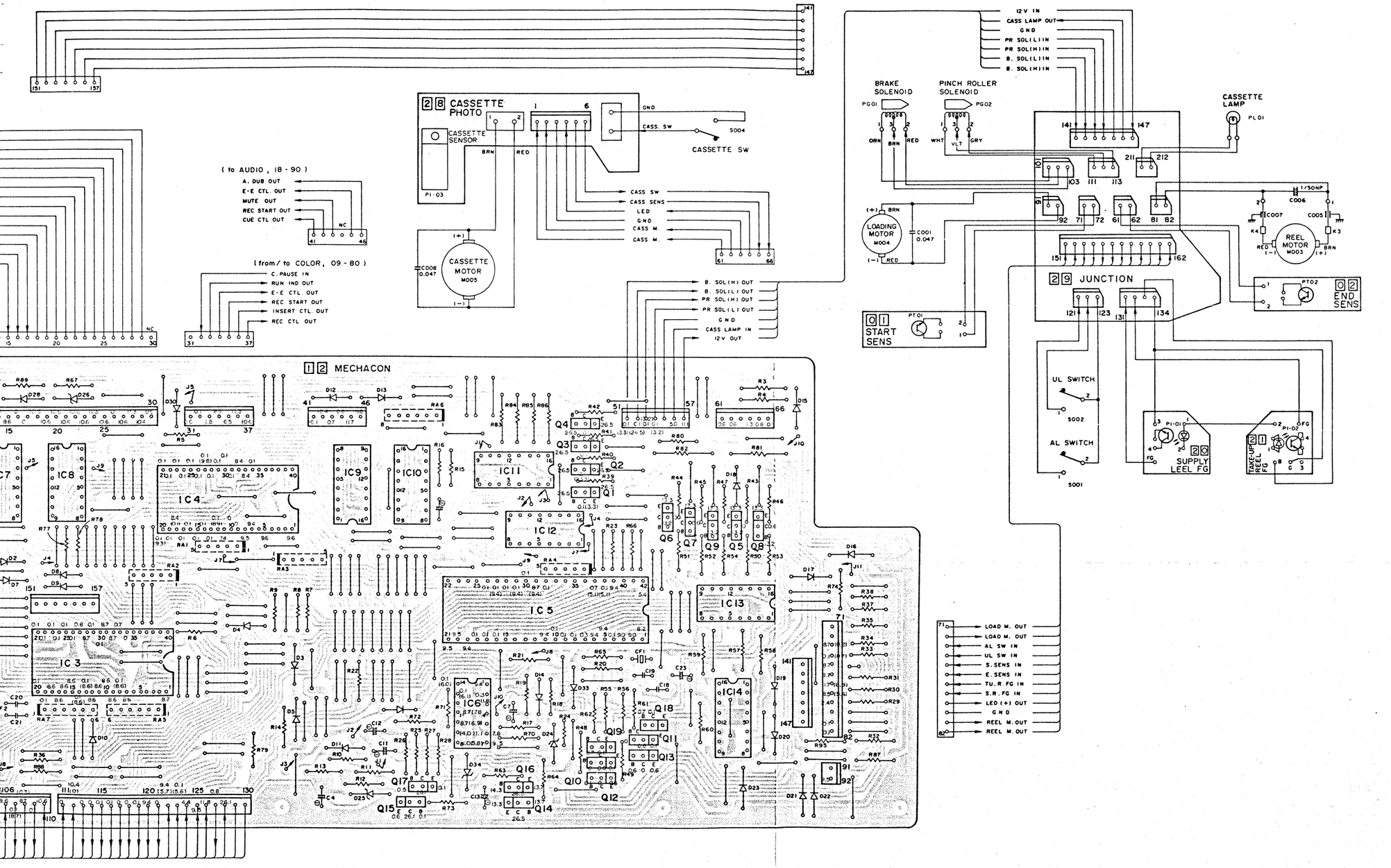
NOTE
UNLESS OTHERWISE SPECIFIED 1. ALL DIODES ARE 1S2473, 2. ALL ▷○ ARE M54519P, 3. ALL RESISTANCE VALUES ARE IN OHMS, 1/8W, CARBON, 4. ALL CAPACITANCE VALUES ARE IN μF.



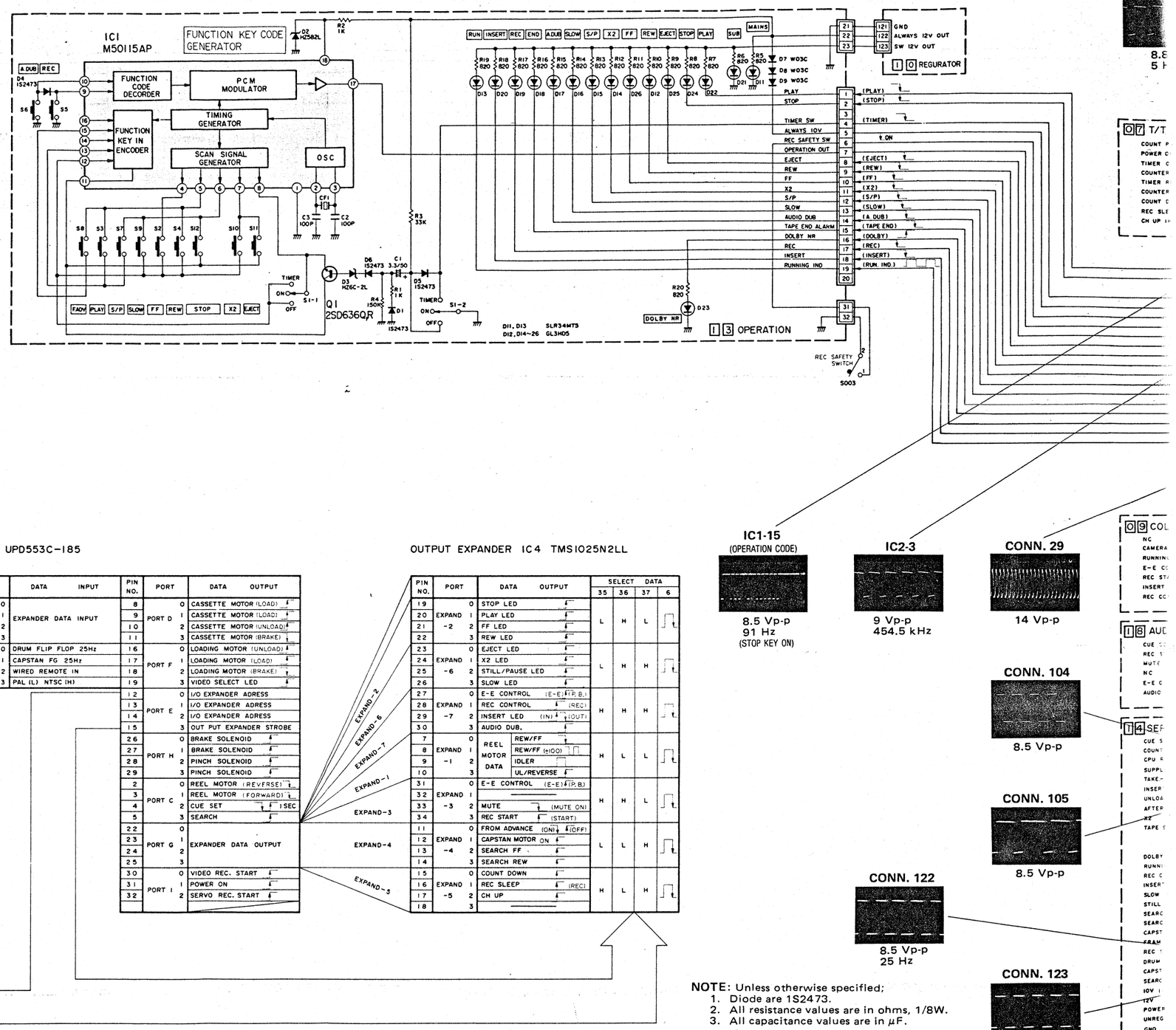
– OPERATION –
REC SAFETY SWITCH
S003
GND
REC SAFE IN
PLAY LED IN
STOP LED IN
T.SW ON OUT
ALL 10V OUT
REC SAFE OUT
OP CODE OUT
EJECT LED IN
REW LED IN
FF LED IN
X2 LED IN
P/S LED IN
SLOW LED IN
A.DUB LED IN
T.E ALM LED IN
DOLBY NR LED OUT
REC LED IN
INSERT LED IN
RUN IND IN
RUN IND OUT
INSERT LED OUT
REC LED OUT
DOLBY NR LED OUT
T.E ALM LED OUT
A.DUB LED OUT
SLOW LED OUT
P/S LED OUT
X2 LED OUT
FF LED OUT
REW LED OUT
EJECT LED OUT
OP CODE IN
REC SAFE IN
ALL 10V IN
T.SW ON IN
STOP LED OUT
PLAY LED OUT
1 3 OPERATION
(from REGULATOR, 10-120)
GND
ALL 12V IN
SW 12V IN
1 4 SERVO
1 CUE SEAR OUT
2 COUNT SEAR OUT
3 RESET IN
4 S.R FG IN
5 TU. R FG IN
6 INSERT SW OUT
7 UL SW IN
8 AL IN
9 X2 IN
10 T.E. ALM OUT
11 DOLBY NR LED OUT
12 RUN IND OUT
13 REC CTL IN
14 INSERT REC IN
15 SLOW IN
16 STILL IN
17 SEAR REW IN
18 SEAR FF IN
19 CAP M. ON IN
20 F. ADV IN
21 REC START IN
22 DRUM FF OUT
23 CAP FG OUT
24 SEAR M.CTL OUT
25 ALL 10V IN
26 12V OUT
27 POWER ON IN
28 UNREG 22V OUT
29 GND
30 GND
(from / to TUNER/TIMER CTL , 07-30)
CH UP OUT
REC SLEEP OUT
CD OUT
COUNT ZERO IN
T.REC START IN
COUNT ± 100 IN
TIMER ON OUT
POWER ON OUT
COUNT PULSE OUT

Mechaniksteuerplatte (Ausführung A) · Mechacon circuit board (Version A) 1 2

– MECHACON –



Mechaniksteuer- und Bedienteil-Schaltungen (Ausführung B) · Mechacon and Operation circuits (Version B)



INPUT EXPANDER IC3 TMS1025N2LL

PIN NO.	PORT		DATA INPUT	SELECT DATA 35	36	37
19	EXPAND -2	0	D5 FUNCTION DATA	L	H	L
20		1	D4 FUNCTION DATA			
21		2	D3 FUNCTION DATA			
22		3	D6 FUNCTION DATA			
23	EXPAND -6	0	INT FUNCTION DATA	L	H	H
24		1	DI FUNCTION DATA			
25		2	DO FUNCTION DATA			
26		3	D2 FUNCTION DATA			
27	EXPAND -7	0	CASSETTE IN DET. (IN)	H	H	H
28		1	AL SW. (ON)			
29		2	UL SW. (ON)			
30		3	CASSETTE SW. (ON)			
31	EXPAND -3	0	START SENSOR (LIGHT)	H	H	L
32		1	END SENSOR (LIGHT)			
33		2	CASSET LAMP (LOW)			
34		3	REC SAFETY SW. (ON)			
15	EXPAND -5	0	SUPLLY REEL FG	H	L	H
16		1	COUNTER SEARCH SW. (ON)			
17		2	CUE SEARCH SW.			
18		3	COUNTER: 100 200 0000			
7	EXPAND -1	0	CAMERA PAUSE	H	L	L
8		1	TIMER REC START (START)			
9		2	POWER ON (ON)			
10		3	TIMER SW. (ON)			
11	EXPAND -4	0	V/T SW(ONLY SECAM)	L	L	H
12		1	INSERT SW. (ON)			
13		2	TAKE UP REEL FG			
14		3	SUPLLY REEL FG			

CPU IC5 UPD553C-185

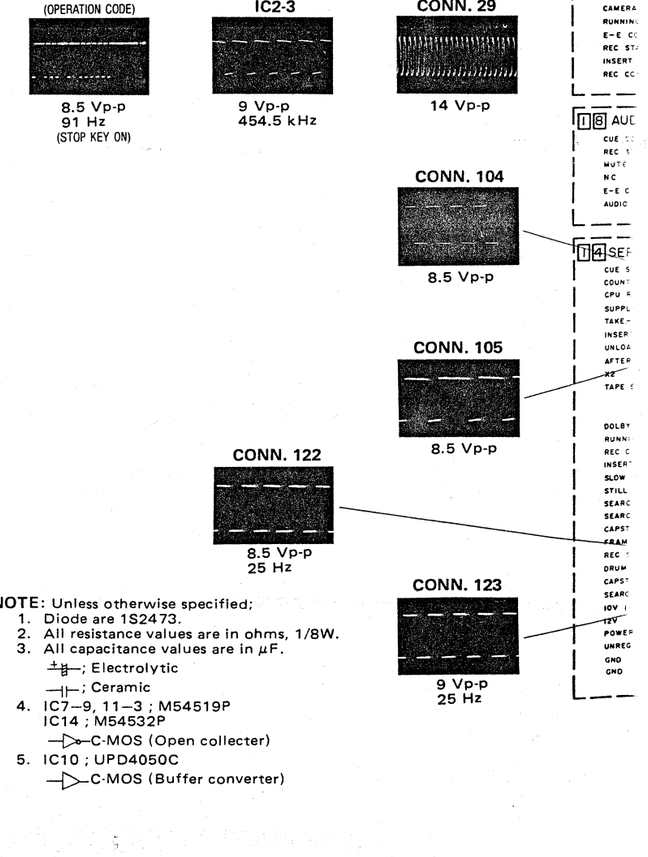
PIN NO.	PORT		DATA INPUT
33	PORT A	0	EXPANDER DATA INPUT
34		1	
35		2	
36		3	
37	PORT B	0	DRUM FLIP FLOP 25Hz
38		1	CAPSTAN FG 25Hz
39		2	WIRED REMOTE IN
40		3	PAL (L) NTSC (H)

PIN NO.	PORT		DATA OUTPUT
8	PORT D	0	CASSETTE MOTOR (LOAD)
9		1	CASSETTE MOTOR (LOAD)
10		2	CASSETTE MOTOR (UNLOAD)
11		3	CASSETTE MOTOR (BRAKE)
16	PORT F	0	LOADING MOTOR (UNLOAD)
17		1	LOADING MOTOR (LOAD)
18		2	LOADING MOTOR (BRAKE)
19		3	VIDEO SELECT LED
12	PORT E	0	I/O EXPANDER ADRESS
13		1	I/O EXPANDER ADRESS
14		2	I/O EXPANDER ADRESS
15		3	OUT PUT EXPANDER STROBE
26	PORT H	0	BRAKE SOLENOID
27		1	BRAKE SOLENOID
28		2	PINCH SOLENOID
29		3	PINCH SOLENOID
2	PORT C	0	REEL MOTOR (REVERSE)
3		1	REEL MOTOR (FORWARD)
4		2	CUE SET (SEC)
5		3	SEARCH
22	PORT G	0	EXPANDER DATA OUTPUT
23		1	
24		2	
25		3	
30	PORT I	0	VIDEO REC. START
31		1	POWER ON
32		2	SERVO REC. START

OUTPUT EXPANDER IC4 TMS1025N2LL

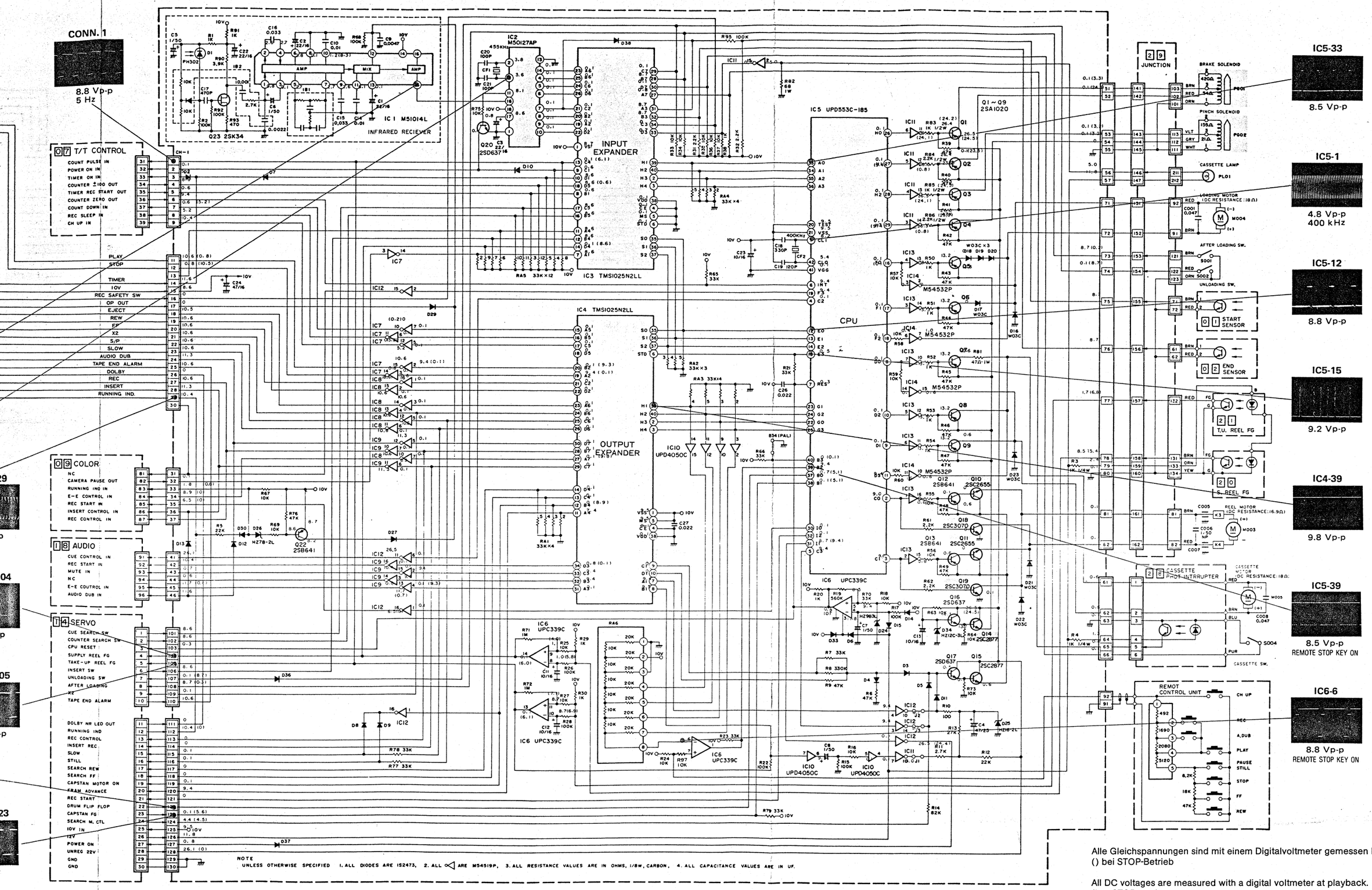
PIN NO.	PORT		DATA OUTPUT		SELECT DATA 35	36	37	6
19	EXPAND -2	0	STOP LED		L	H	L	⎍
20		1	PLAY LED					
21		2	FF LED					
22		3	REW LED					
23	EXPAND -6	0	EJECT LED		L	H	H	⎍
24		1	X2 LED					
25		2	STILL/PAUSE LED					
26		3	SLOW LED					
27	EXPAND -7	0	E-E CONTROL	(E-E) (P.B.)	H	H	H	⎍
28		1	REC CONTROL	(REC)				
29		2	INSERT LED	(IN) (OUT)				
30		3	AUDIO DUB.					
7	EXPAND -3	0	REEL MOTOR DATA	REW/FF	H	L	L	⎍
8		1		REW/FF (HOO)				
9		2		IDLER				
10		3		UL/REVERSE				
31	EXPAND -4	0	E-E CONTROL	(E-E) (P.B.)	H	H	L	⎍
32		1						
33		2	MUTE	(MUTE ON)				
34		3	REC START	(START)				
11	EXPAND -5	0	FROM ADVANCE	(ON) (OFF)	L	L	H	⎍
12		1	CAPSTAN MOTOR	ON				
13		2	SEARCH FF					
14		3	SEARCH REW					
15	EXPAND -1	0	COUNT DOWN		H	L	H	⎍
16		1	REC SLEEP	(REC)				
17		2	CH UP					
18		3						

EXPAND-2, EXPAND-6, EXPAND-7, EXPAND-3, EXPAND-5, EXPAND-1, EXPAND-4



NOTE: Unless otherwise specified;

1. Diode are 1S2473.
2. All resistance values are in ohms, 1/8W.
3. All capacitance values are in μF.
   ⊣⊢; Electrolytic
   —||—; Ceramic
4. IC7–9, 11–3 ; M54519P
   IC14 ; M54532P
   —▷○—C-MOS (Open collecter)
5. IC10 ; UPD4050C
   —▷—C-MOS (Buffer converter)



Alle Gleichspannungen sind mit einem Digitalvoltmeter gemessen bei Wiedergabe.
() bei STOP-Betrieb

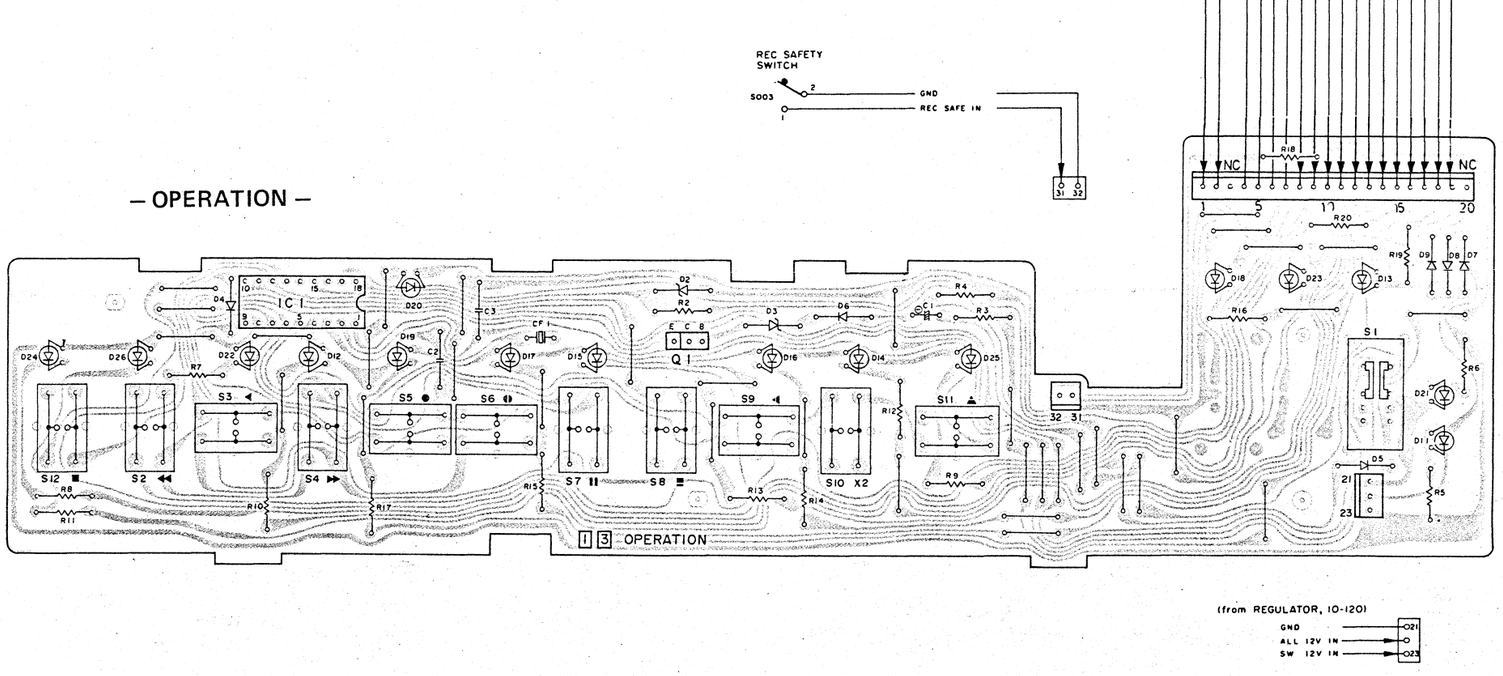
All DC voltages are measured with a digital voltmeter at playback.
() at STOP mode

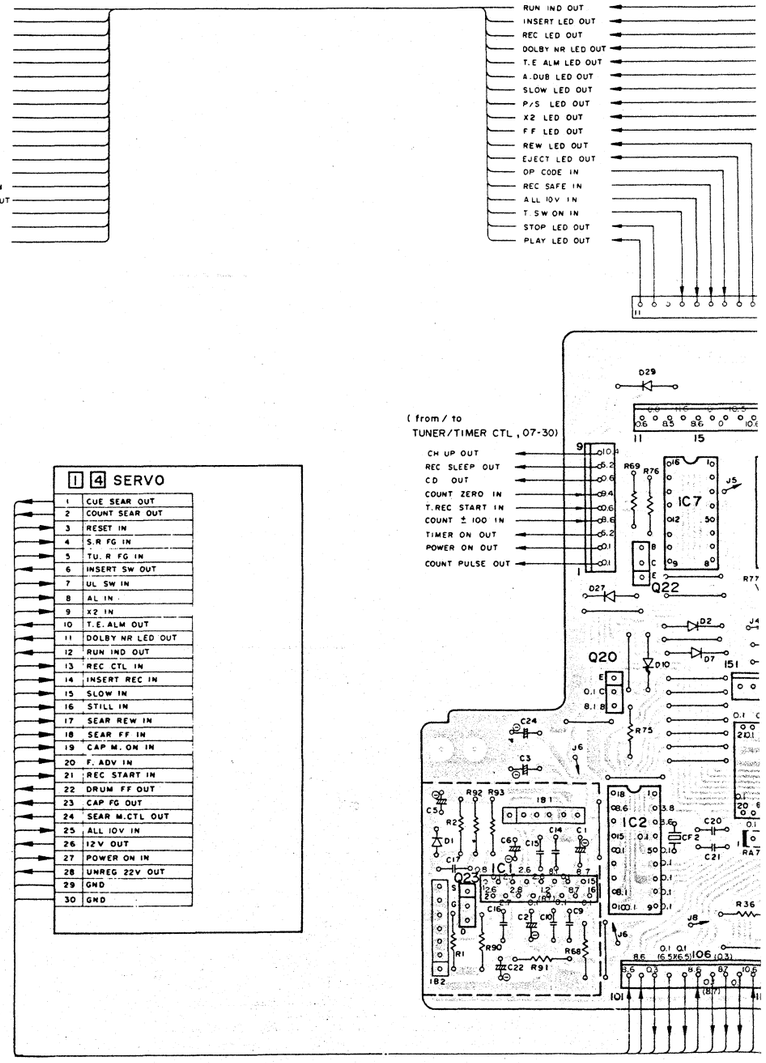
Sicherheitsbauteile nur gegen Original-Ersatzteile auswechseln!

Replace safety components only with original spare parts!

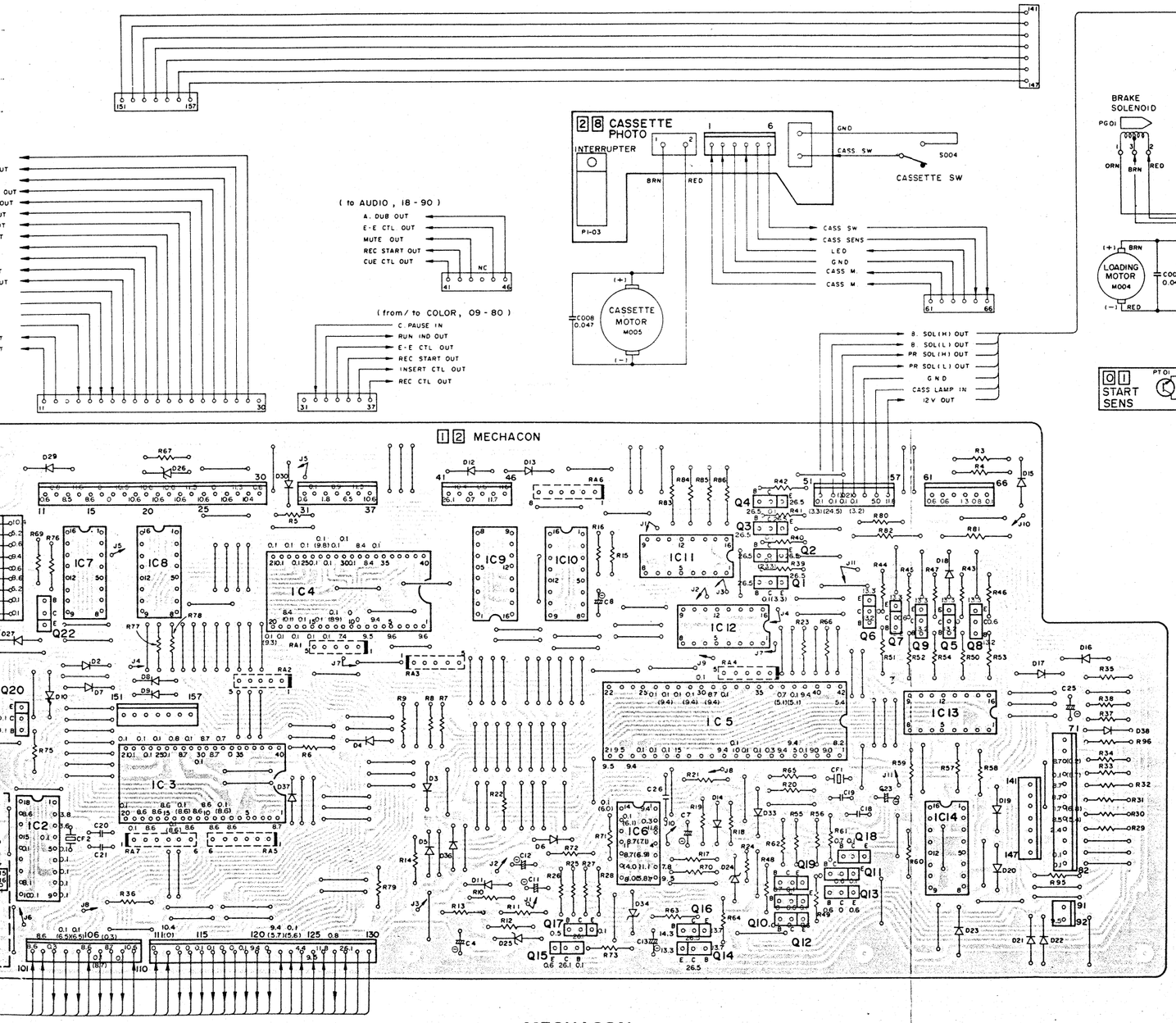
Bedientastenplatte · Operation circuit board 1 3

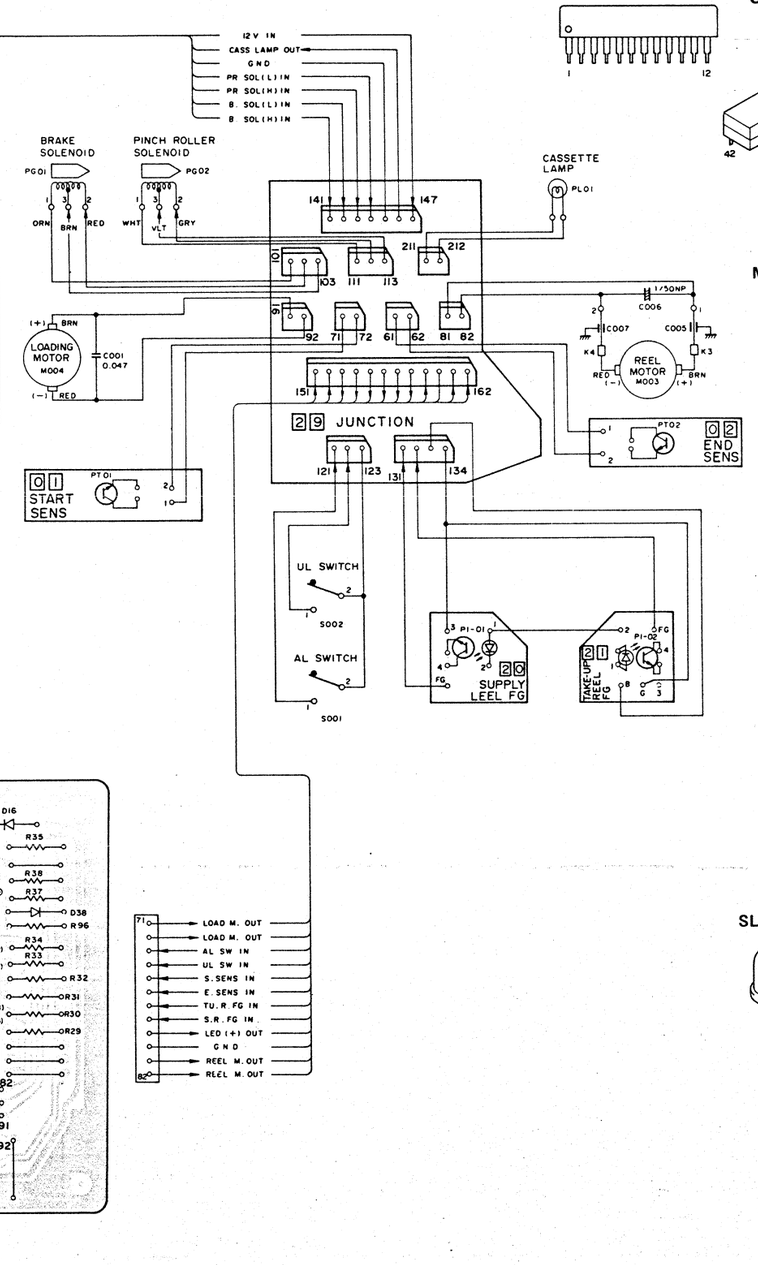
– OPERATION –

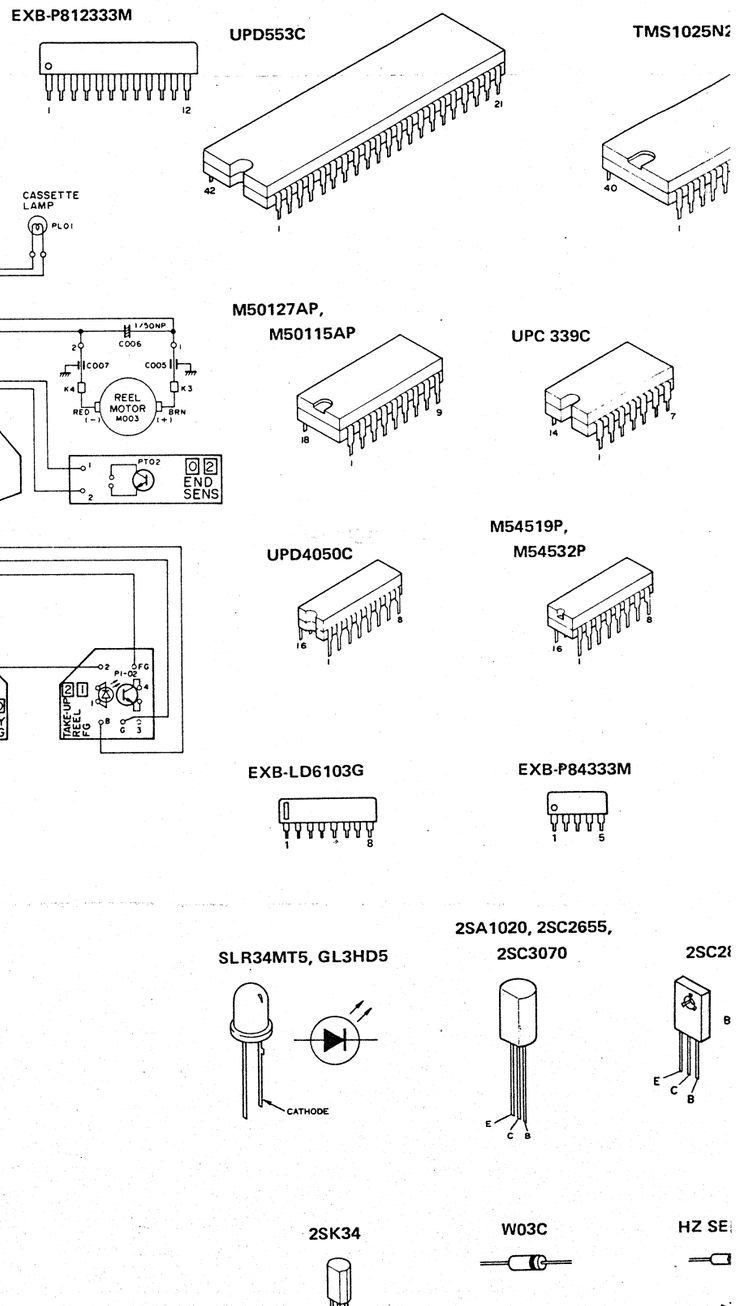




Mechaniksteuerplatte (Ausführung B) · Mechacon circuit board (Version B) 1 2

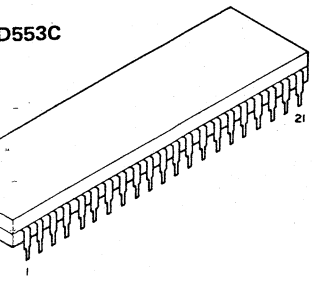




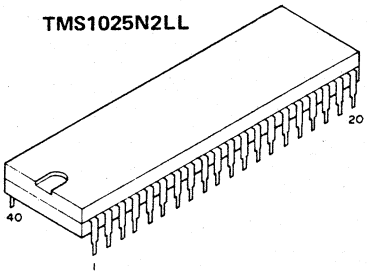


– MECHACON –

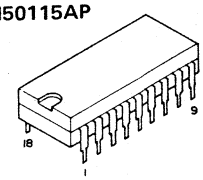
D553C



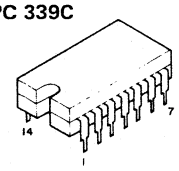
TMS1025N2LL



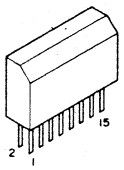
0127AP,
M50115AP



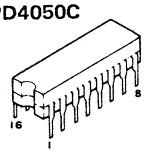
UPC 339C



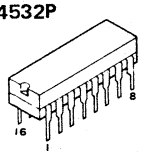
M51014L



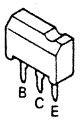
UPD4050C



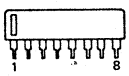
M54519P,
M54532P



2SB641, 2SD637,
2SD636



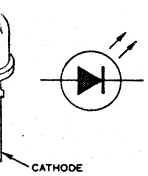
XB-LD6103G



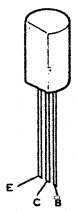
EXB-P84333M

EXB-P85333M

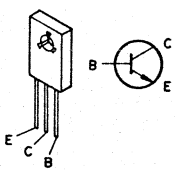
4MT5, GL3HD5



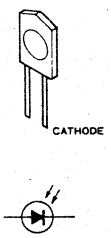
2SA1020, 2SC2655,
2SC3070



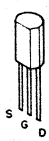
2SC2877



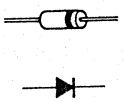
PH302



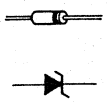
2SK34



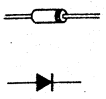
W03C



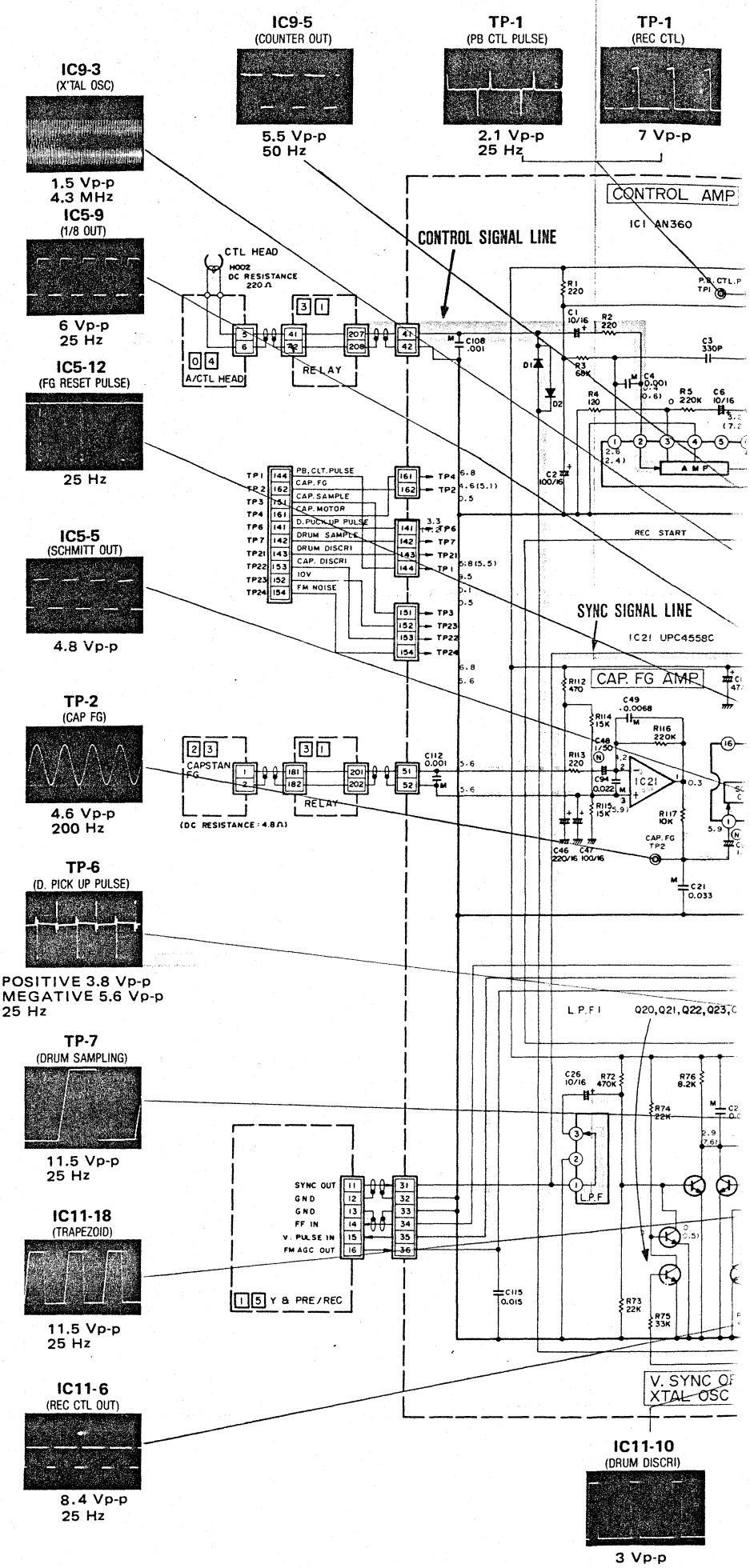
HZ SERIES



1S2473



Servo-Schaltungen · Servo circuits



TP-1 (PB CTL PULSE) 2.1 Vp-p 25 Hz

TP-1 (REC CTL) 7 Vp-p

IC3-1 (X2 CTL PULSE) 12 Vp-p 25 Hz

IC10-16 (H. SYNC) 4.4 Vp-p 15.625 kHz

IC6-3 (CAP DISCRI) 4 Vp-p 100 Hz

IC6-4 (CAP DISCRI) 6.3 Vp-p

TP-3 (CAP SAMPLING) 11.5 Vp-p 25 Hz

IC6-5 (CAP. DISCRI) 3.4 Vp-p

IC10-14 (MMV. OUT) 11.5 Vp-p

IC10-12 (TRAPEZOID) 11.5 Vp-p

IC10-11 (DISCRI) 3.5 Vp-p

CONTROL AMP

IC1 AN360

CONTROL SIGNAL LINE

CTL. OR FG SELECT

Q1 IC2 TC4069BP IC3 TC4027BP IC4 TC4011BP IC4 Q2 SPEED (X2)

CTL. I/2 C.D. AT SPEED MODE

CTL. DUTY 50%

CAP. PHASE AND DISCRI

Q3 REC Q4 IC6 AN6341N

SW

IC7 TC4066BP

NON LINEAR

Q5,Q6

IC8 UPC1458C Q7 IC23 M54519P Q8 Q9 Q10

CAP. MOTOR CONTROL

DC LIMITER

SLOW PULSE AMP

SYNC SIGNAL LINE

FG AMP AND COUNTER

IC21 UPC4558C IC5 AN6345

CAP. FG AMP

IC9 AN6342N XTAL OSC

SEARCH MOTOR SPEED CONTROL

IC10 AN6341N Q27 IC21 UPC4558C Q28 Q29 IC18 BA222V Q38 Q37

DRUM MOTOR CTL. SLOW/STILL

IC15 DN850 Q30 Q31 Q32

V. PULSE AMP

IC24 M54519P

X'TAL 50Hz LINE

L.P.F1 Q20,Q21,Q22,Q23,Q24

IC11 AN6350

DRUM FLIP FLOP

DRUM PULSE AMP

IC13 UPC1458C IC12 TC4066BP IC13,IC14 UPC1458C

DRUM MOTOR CONTROL

DRUM FG AMP Q36

FM NOISE DETECTOR

IC20 UPC339C Q35

SLOW SPEED MMV

CAP FG AMP

V. SYNC OR XTAL OSC SELECT

DRUM PHASE AND DISCRI

DRUM PULSE LINE

DRUM FG LINE

IC11-10 (DRUM DISCRI) 3 Vp-p

IC11-11 (TRAPEZOID) 6.2 Vp-p

IC11-13 (MMV. OUT) 3.9 Vp-p

IC11-14 (DRUM FG) 520 mV 1500 Hz

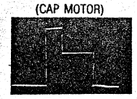
TP-24 (FM NOISE) 50 Hz TP206 FM OUT TP24 FM NOISE

IC20-PIN 2 (DRUM FG) 1500 Hz

IC20-PIN 14 (CAP. FG) 25 Hz 9.2 Vp-p

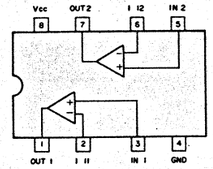
IC16-PIN 37 (TU. REEL FG) 8.6 Vp-p

TP-4
(CAP MOTOR)

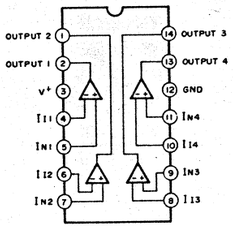


0.15 Vp-p
(SLOW mode)

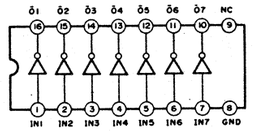
IC13, 14 19 : UPC1458C, UPD4558C



IC20 : UPC339C



IC22, 23, 24 : M54519P



(NOTE) UNLESS OTHERWISE SPECIFIED:
1. ALL RESISTANCE VALUES ARE IN OHMS, 1/8W.
2. ALL DIODES ARE 1S2473 OR MA150.
3. ALL CAPACITANCE VALUES ARE IN μF.
ELECTROLYTIC — NON. P
MYLAR
CERAMIC
(PP) POLYPROPYLENE

4. NPN TYPE TRANSISTORS ARE 2SD636R,S.
PNP TYPE TRANSISTORS ARE 2SB643R,S.

5 Q16,17,18,19 : 2SC2655ÖY

Important!
Check that the Sub-power switch is on before measuring voltages at IC 7 and IC 12. These devices can be damaged if measurement is performed with power off.

Achtung!
Bevor die Spannungen an IC 7 und IC 12 gemessen werden, muß der Betriebsschalter auf der Gerätevorderseite eingeschaltet werden. Diese Stufen können zerstört werden, wenn im ausgeschalteten Zustand an ihnen gemessen wird.

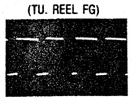
Alle Gleichspannungen sind mit einem Digitalvoltmeter gemessen
bei Aufnahme
() bei Wiedergabe

All DC voltages are measured with a digital voltmeter at record mode
() at playback

Sicherheitsbauteile nur gegen Original-Ersatzteile auswechseln!

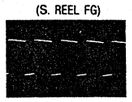
Replace safety components only with original spare parts!

IC16-PIN 37
(TU. REEL FG)



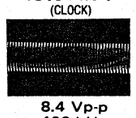
8.6 Vp-p

IC16-PIN38
(S. REEL FG)



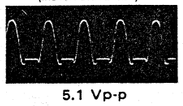
8.6 Vp-p

IC16-PIN 1
(CLOCK)



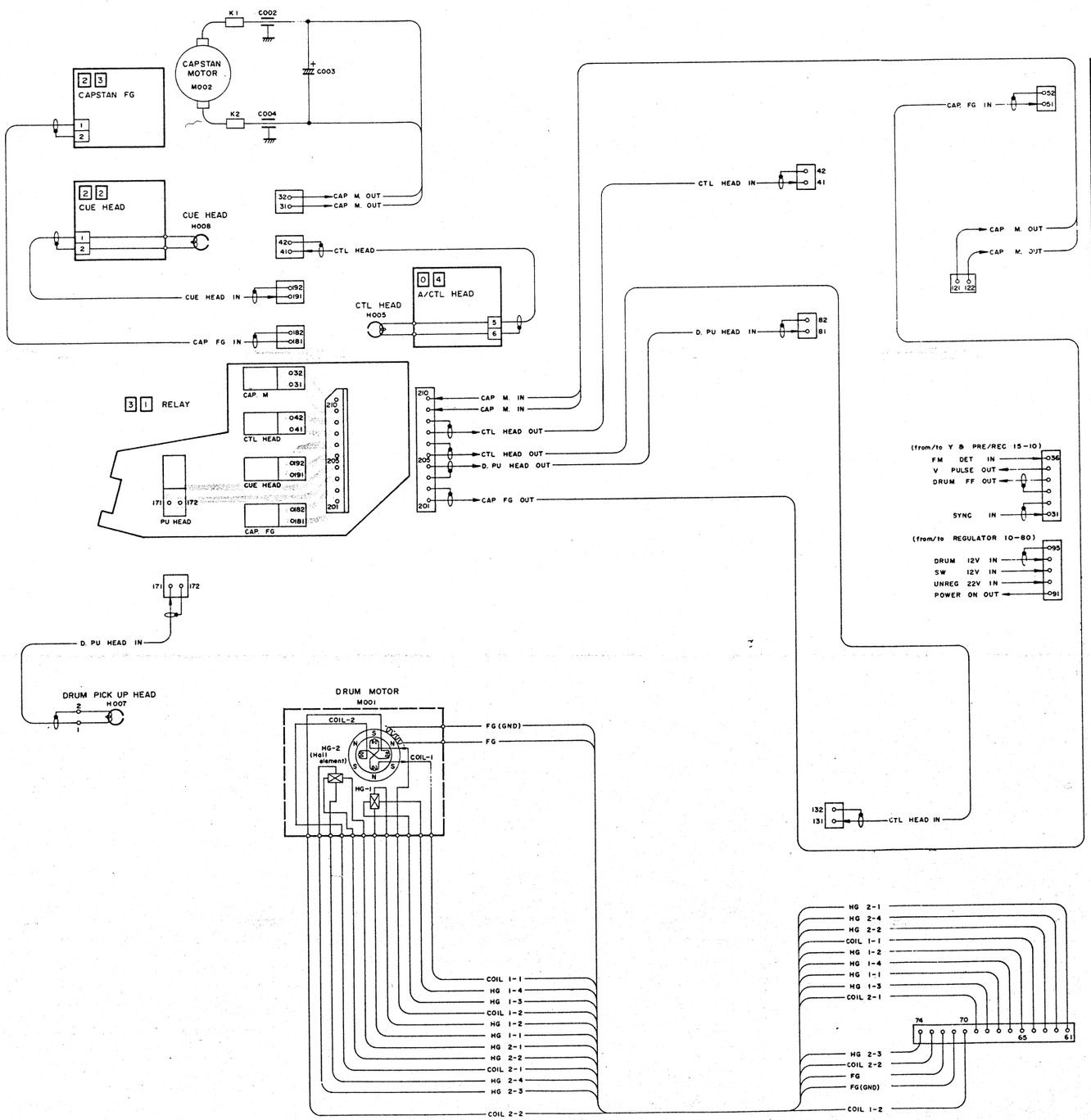
8.4 Vp-p
400 kHz

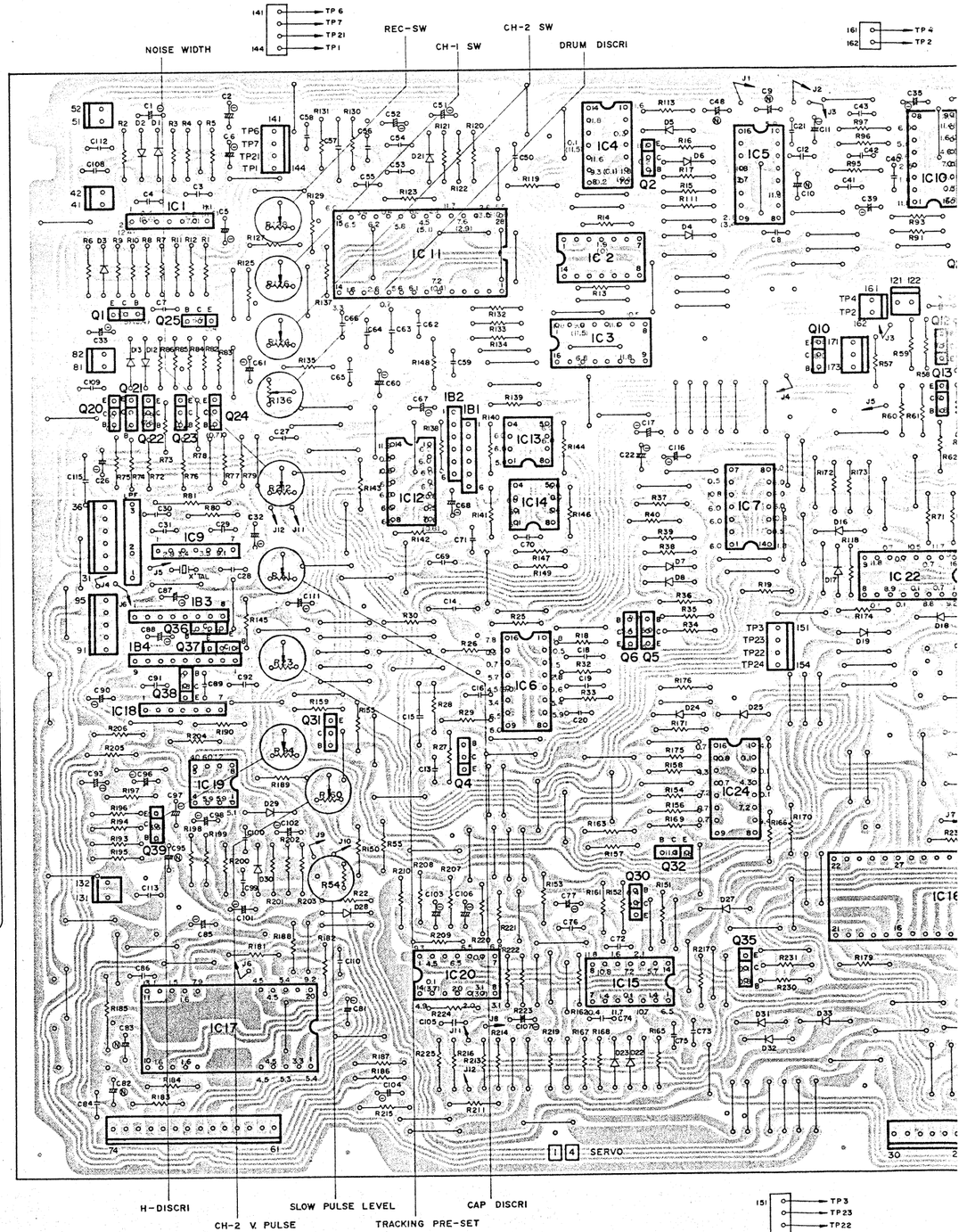
IC17-PIN 7
(MOTOR DRIVE OUT)

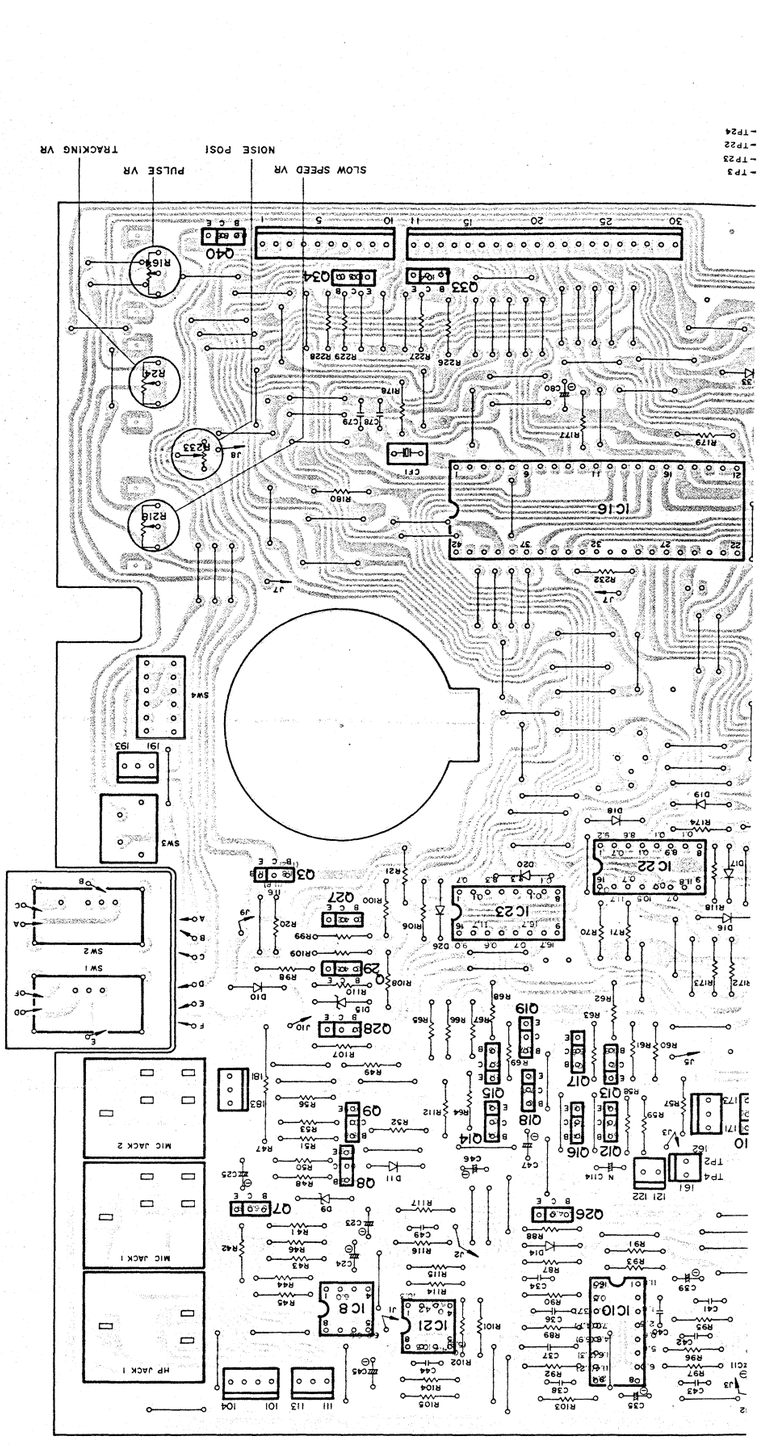


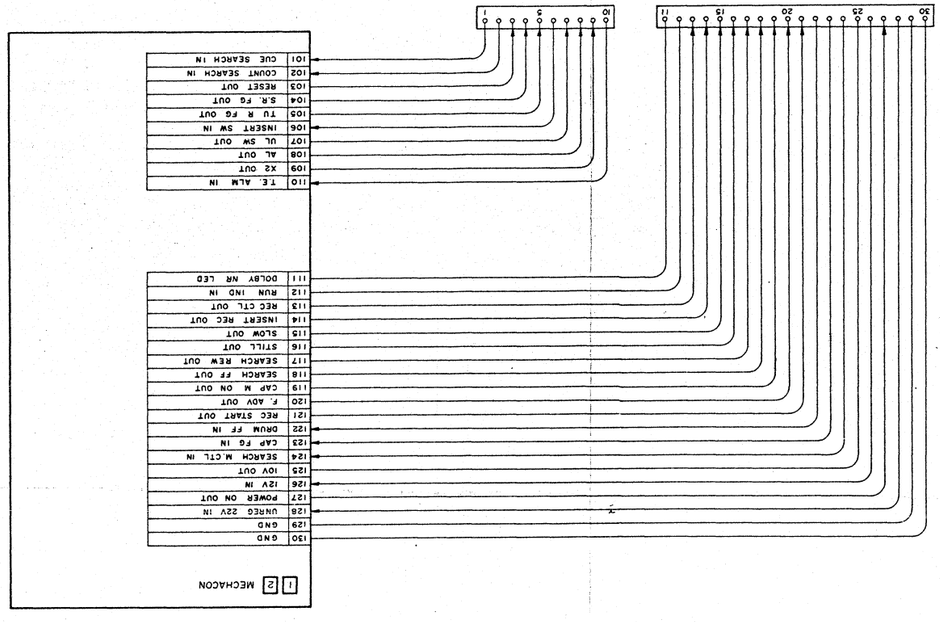
5.1 Vp-p

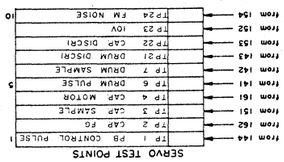
Servo-Platte · Servo circuit board 1 4

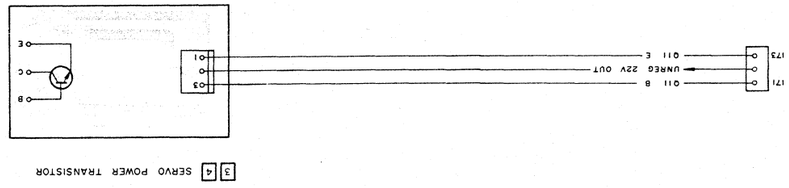


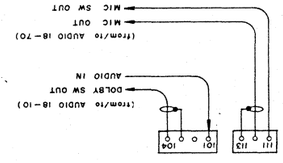


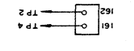

SLOW SPEED VR
NOISE POSI
PULSE VR
TRACKING VR
IC16
IC22
IC23
IC8
IC21
IC10
Q40
Q33
Q34
Q24
Q33
Q9
Q27
Q28
Q29
Q3
Q26
Q7
Q8
Q12
Q13
Q14
Q15
Q16
Q17
Q18
Q19
SW1
SW2
SW3
SW4
MIC JACK 2
MIC JACK 1
HP JACK 1
TP24
TP23
TP22
TP3

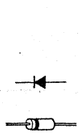

MECHACON
GND
UNREG 22V IN
POWER ON OUT
12V IN
10V OUT
SEARCH M.CTL IN
CAP FG IN
DRUM FF IN
REC START OUT
F. ADV OUT
CAP M ON OUT
SEARCH FF OUT
SEARCH REW OUT
STILL OUT
SLOW OUT
INSERT REC OUT
REC CTL OUT
RUN IND IN
DOLBY NR LED
T.E. ALM IN
X2 OUT
AL OUT
UL SW OUT
INSERT SW IN
TU R FG OUT
S.R. FG OUT
RESET OUT
COUNT SEARCH IN
CUE SEARCH IN


SERVO TEST POINTS
TP1 PB CONTROL PULSE
TP2 CAP FG
TP3 CAP SAMPLE
TP4 CAP MOTOR
TP 6 DRUM PULSE
TP 7 DRUM SAMPLE
TP21 DRUM DISCRI
TP22 CAP DISCRI
TP23 10V
TP24 FM NOISE

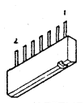

SERVO POWER TRANSISTOR
Q11 E
Q11 B
UNREG 22V OUT
Q11 C


(from/to AUDIO 18-10)
DOLBY SW OUT
AUDIO IN
(from/to AUDIO 18-TO)
MIC OUT
MIC SW OUT

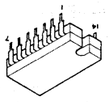

TP4
TP2

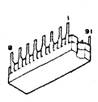

2SC2655

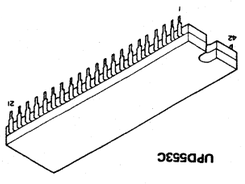
W03C

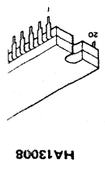

BA222V

AN360, AN6342N

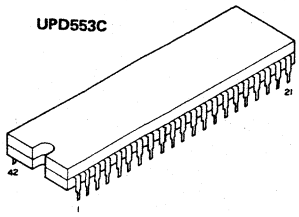

TC4069BP
TC4011BP, TC4066BP, UPC33(C


TC4027BP, AN6345,
AN6341


UPD553C


HA13008

UPD553C



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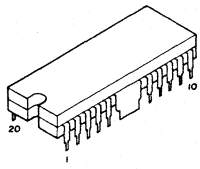
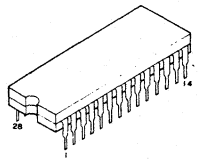
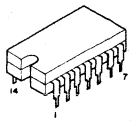


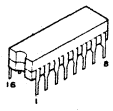
AN6350



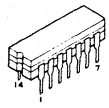
TC4069BP
TC4011BP, TC4066BP, UPC33(C



TC4027BP, AN6345,
AN6341N



DN850



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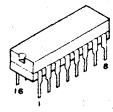
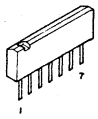
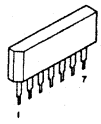


BA222V



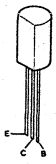
AN360, AN6342N



UPC1458C, UPC4558C

2SD636, 2SB643

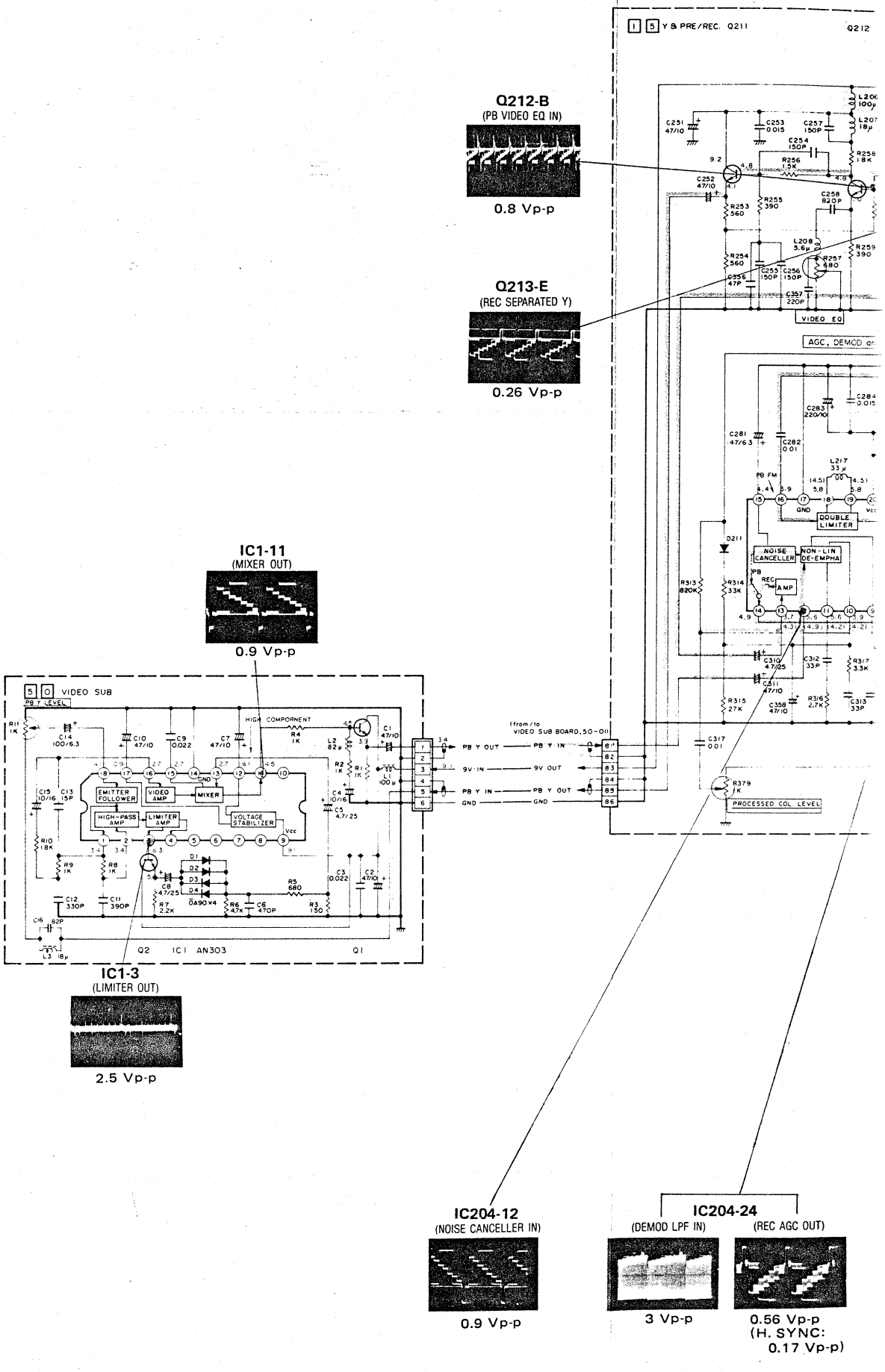
2SC2655



W03C

AW08-16, HZ6A-1L

1S2473


Q212-B
(PB VIDEO EQ IN)
0.8 Vp-p
Q213-E
(REC SEPARATED Y)
0.26 Vp-p
IC1-11
(MIXER OUT)
0.9 Vp-p
IC1-3
(LIMITER OUT)
2.5 Vp-p
IC204-12
(NOISE CANCELLER IN)
0.9 Vp-p
IC204-24
(DEMOD LPF IN)
3 Vp-p
(REC AGC OUT)
0.56 Vp-p
(H. SYNC:
0.17 Vp-p)
Y & PRE/REC. Q211
Q212
VIDEO EQ
AGC, DEMOD
DOUBLE LIMITER
NOISE CANCELLER
NON-LIN DE-EMPHA
PROCESSED COL. LEVEL
VIDEO SUB
PB Y LEVEL
HIGH COMPONENT
EMITTER FOLLOWER
VIDEO AMP
MIXER
HIGH-PASS AMP
LIMITER AMP
VOLTAGE STABILIZER
Q2 IC1 AN303 Q1
PB Y OUT
9V IN
PB Y IN
GND
(from/to VIDEO SUB BOARD, 50-01)

nd Aufnahme/Wiedergabe-, Video-Zusatz- und Farb-) Schaltungen · Video (Y and Pre/Rec, Video Sub and Color) Circuits

IC205-18 (PRE EMPHA IN) — 1.6 Vp-p

TP-206 (PB FM SIGNAL) — 0.55 Vp-p

IC205-22 (DOC OUT) — 0.65 Vp-p

IC205-28 (PB FM) — 300 mVp-p

(FM MOD OUT) — 1.6 Vp-p

TP-221 (REC FM) — 0.85 Vp-p

Q219-E (PB COLOR OUT) — 0.8 Vp-p

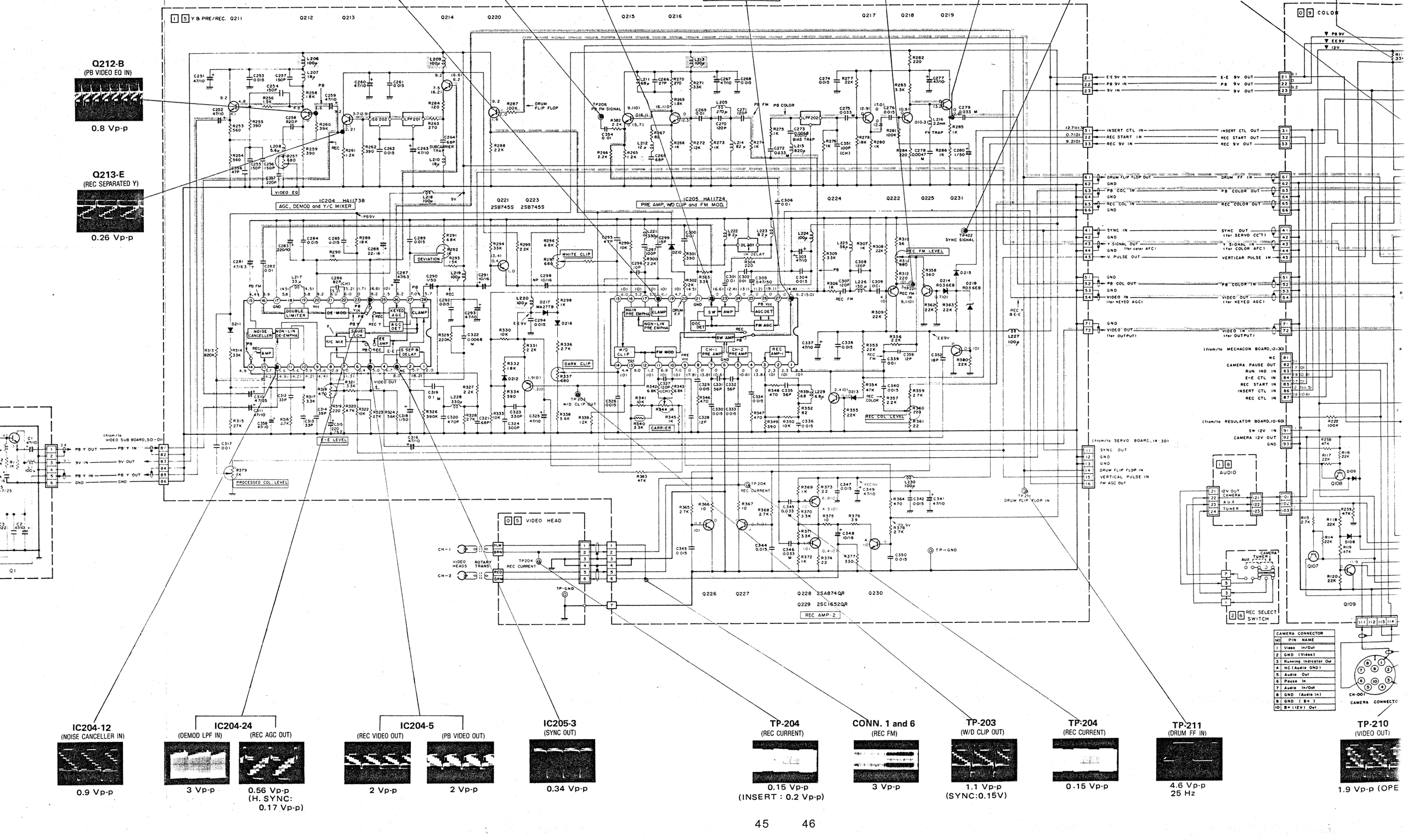
TP-422 (SYNC SIGNAL) — 5.0 Vp-p, 50 Hz

TP-421 (D. FLIP FLOP) — 360 mVp-p, 25 Hz

TP-412 (AFC OUT) — 5.8 Vp-p, 15.625 kHz

Q212-B (PB VIDEO EQ IN) — 0.8 Vp-p

Q213-E (REC SEPARATED Y) — 0.26 Vp-p



CAMERA CONNECTOR	
NO.	PIN NAME
1	Video In/Out
2	GND (Video)
3	Running Indicator Out
4	NC (Audio GND)
5	Audio Out
6	Pause In
7	Audio In/Out
8	GND (Audio In)
9	GND (B+)
10	B+ (12V) Out

IC204-12 (NOISE CANCELLER IN) — 0.9 Vp-p

IC204-24 (DEMOD LPF IN) — 3 Vp-p

(REC AGC OUT) — 0.56 Vp-p (H. SYNC: 0.17 Vp-p)

IC204-5 (REC VIDEO OUT) — 2 Vp-p

(PB VIDEO OUT) — 2 Vp-p

IC205-3 (SYNC OUT) — 0.34 Vp-p

TP-204 (REC CURRENT) — 0.15 Vp-p (INSERT : 0.2 Vp-p)

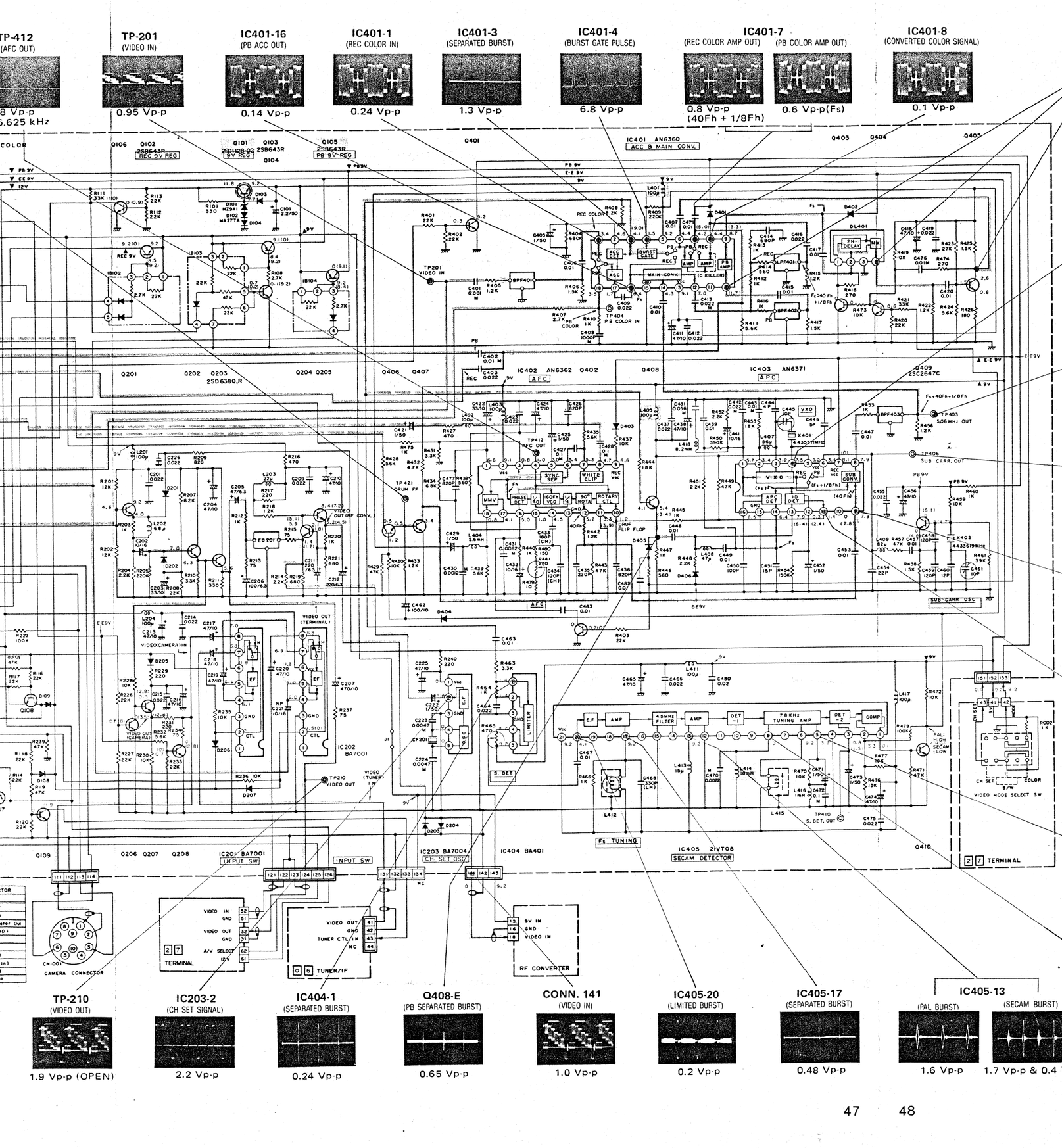
CONN. 1 and 6 (REC FM) — 3 Vp-p

TP-203 (W/D CLIP OUT) — 1.1 Vp-p (SYNC:0.15V)

TP-204 (REC CURRENT) — 0.15 Vp-p

TP-211 (DRUM FF IN) — 4.6 Vp-p, 25 Hz

TP-210 (VIDEO OUT) — 1.9 Vp-p (OPE



NOTES: Unless otherwise specified:

1. NPN type transistors are 2S2021Q, R or S.
2. Diodes are MA150, 1S24733.
3. All resistance values are in ohms, 1/8 W.
4. All capacitance values are in μF.
   ⊣⊢: Electrolytic
   ⊣‖⊢: Mylar
   ⊣|⊢: Ceramic
5. All inductance values are in H.

Alle Gleichspannungen sind mit einem Digitalvoltmeter gemessen bei Aufnahme, () bei Wiedergabe

All DC voltages are measured with a digital voltmeter at record mode, () at playback

Wenn nicht anders gekennzeichnet, beziehen sich die angegebenen Signalformen auf Aufnahme- oder E-E-Betrieb.

When not specified, waveform is recording or E-E mode

▨ Sicherheitsbauteile nur gegen Original-Ersatzteile auswechseln!

Replace safety components only with original spare parts!

Fehlersuch-Hinweise

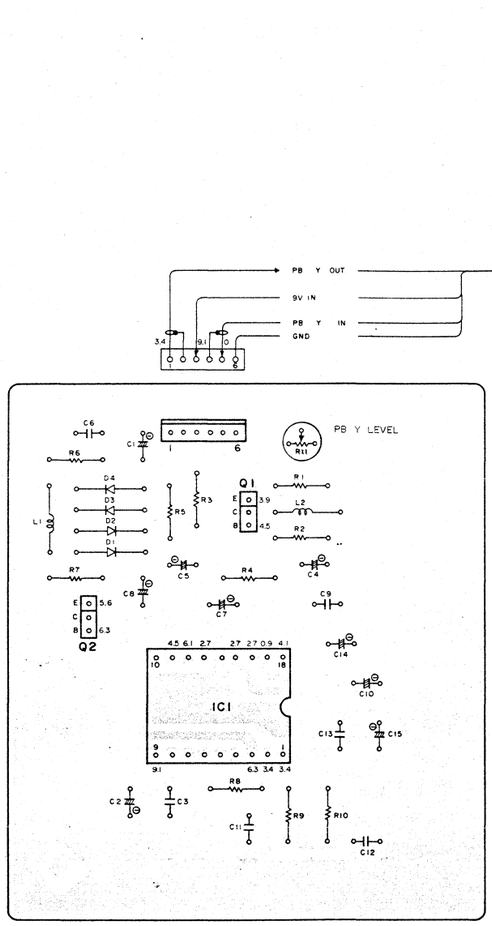
Farbstufen – schlechtes Farbbild bei Eigenaufnahmen. Zuerst bestimmen, ob der Fehler in der APC- oder in der AFC-Regelschleife liegt. Ein Farbbalkensignal zuführen und aufnehmen. Diese Aufnahme auf einem einwandfrei arbeitenden Gerät abspielen. Ergibt sich ein normales Farbbild, ist die AFC-Regelschleife (IC 402) in Ordnung. Deshalb sind die APC-Regelschleife, der Zwischenträger-Oszillator (Q 409), die Burst-Tor-Schaltung (IC 401, Q 408) oder der APC-Detektor (IC 403) zu überprüfen. Sind diese Schaltungen fehlerfrei, ist C 461 (SUB CARR, OSC/Zwischenträgeroszillator) abzugleichen. Ist das Farbbild weiterhin fehlerhaft, muß die AFC-Regelschleife defekt sein. Die AFC-Regelschleife, die Horizontal-Synchronimpuls-Abtrennung, den Horizontal-Frequenz-Phasendetektor (IC 402) und das Kopftrommel Flip-Flop-Signal (Q 406, Q 407) überprüfen. Arbeiten diese Schaltungen einwandfrei, müssen R 441 (AFC) und C 445 (VXO/spannungsgesteuerter Quarzoszillator) neu abgeglichen werden.

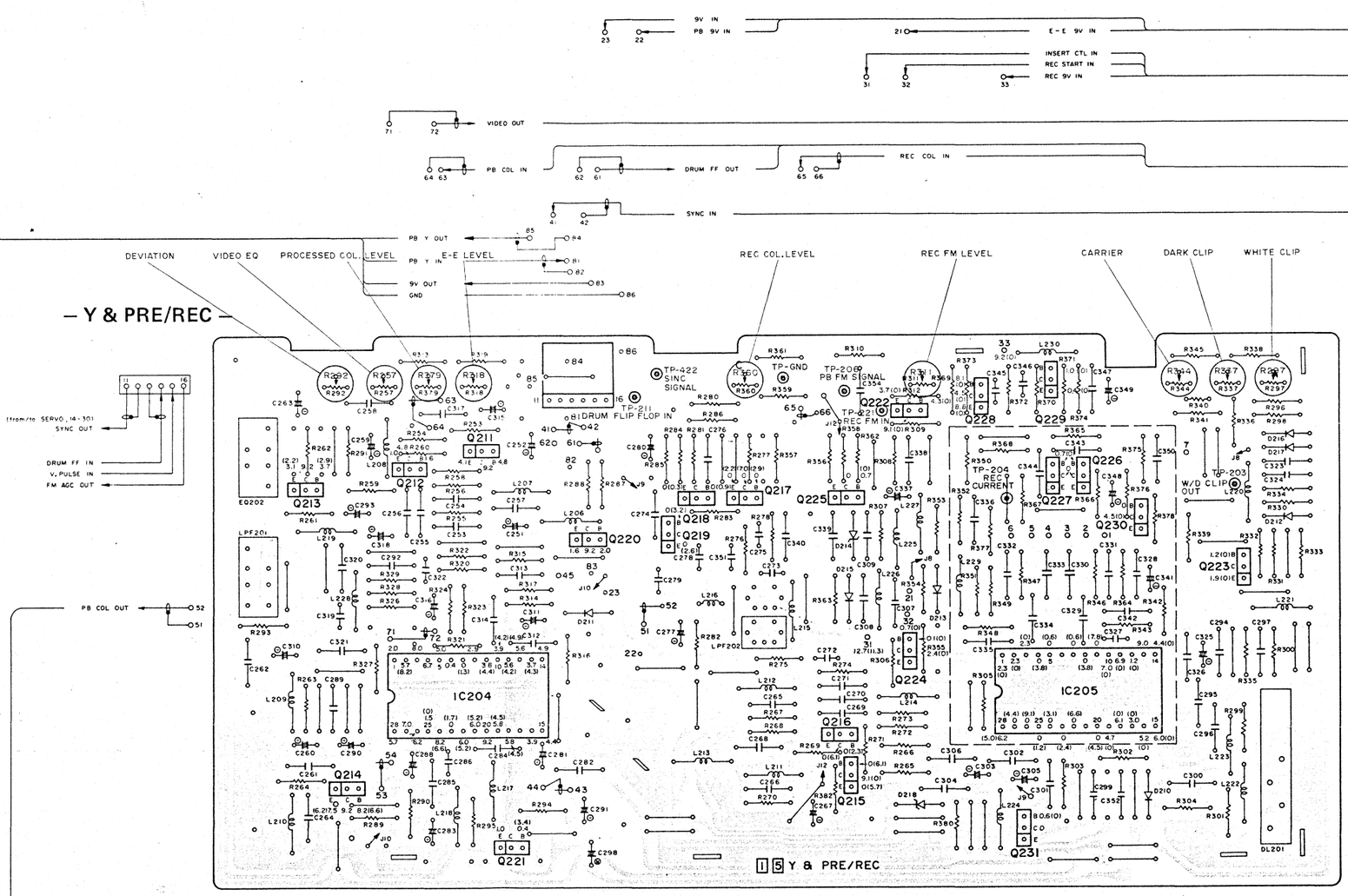
Troubleshooting guide

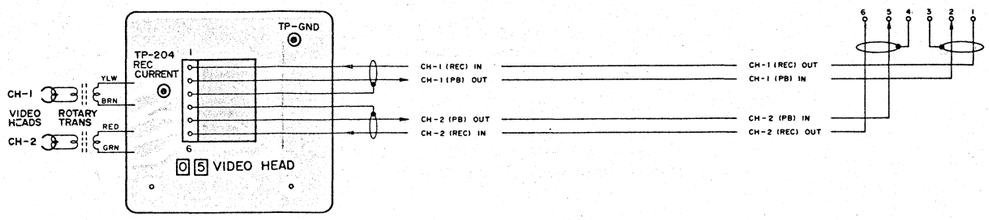
Color process – Poor color image when self-recording.
First determine whether the trouble is in the APC loop or AFC loop.
Supply a color bar signal and record.
Play this recorded tape using a properly functioning player. If color image is normal, the AFC loop (IC 402) is normal.
Therefore check the APC loop, subcarrier osc. (Q 409), burst gate circuit (IC 401, Q 408) or APC detector (IC 403).
If these circuits are normal, adjust C 461 (SUB CARR. OSC.).
If color image is abnormal, the AFC loop is abnormal.
Check the AFC loop, H. sync sep., Fh phase detector (IC 402) and drum flip-flop signal (Q 406, Q 407).
If these circuits are normal, adjust R 441 (AFC) and C 445 (VXO).

— VIDEO SUB —

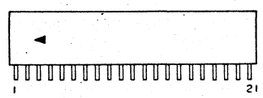
— Y & PRE/REC —



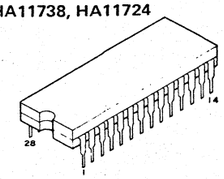




21VT08

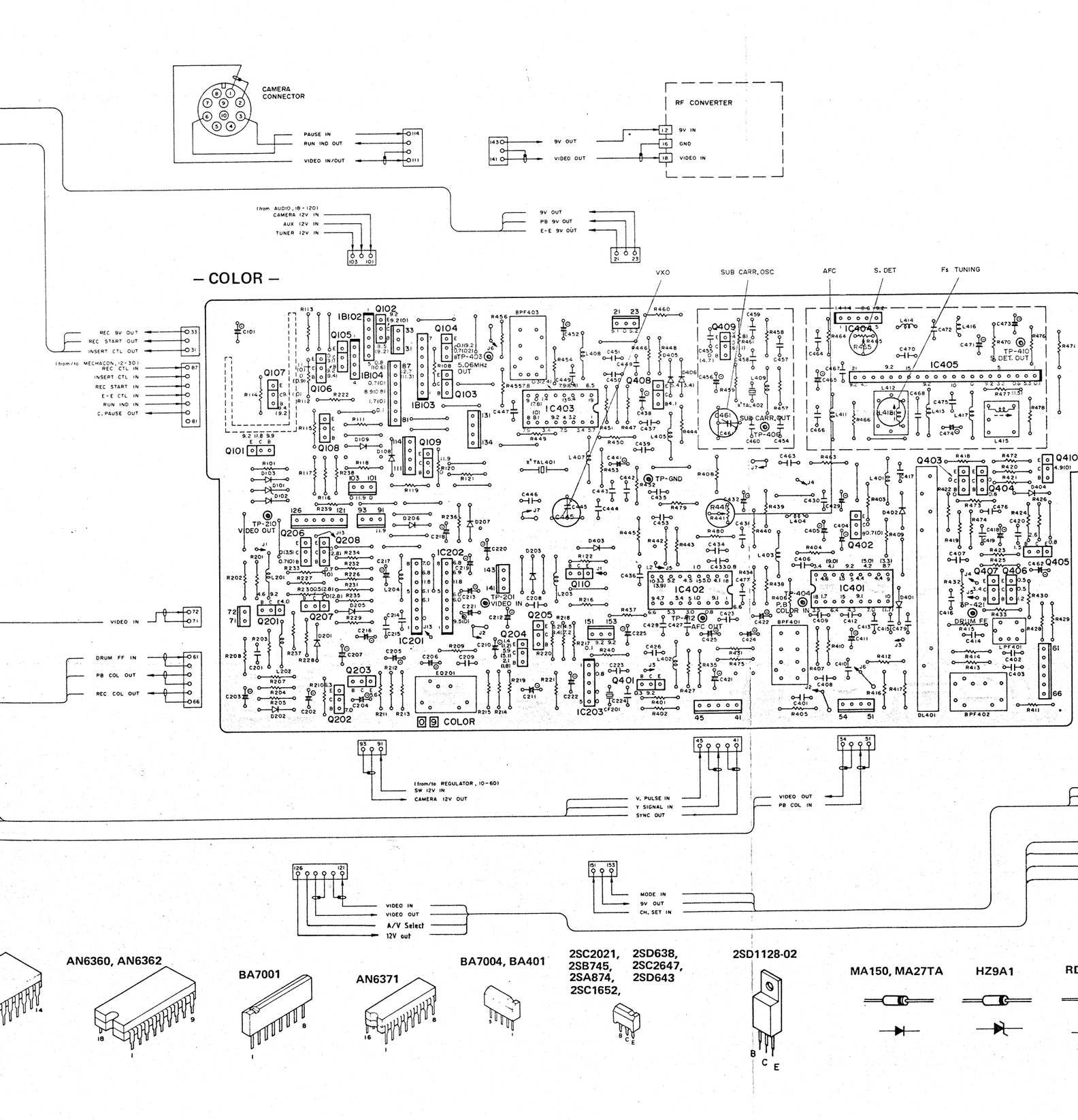


HA11738, HA11724



AN636

Farbplatte · Color circuit board 09



AN6360, AN6362

BA7001

AN6371

BA7004, BA401

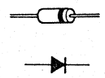
2SC2021, 2SD638,
2SB745, 2SC2647,
2SA874, 2SD643
2SC1652,

2SD1128-02

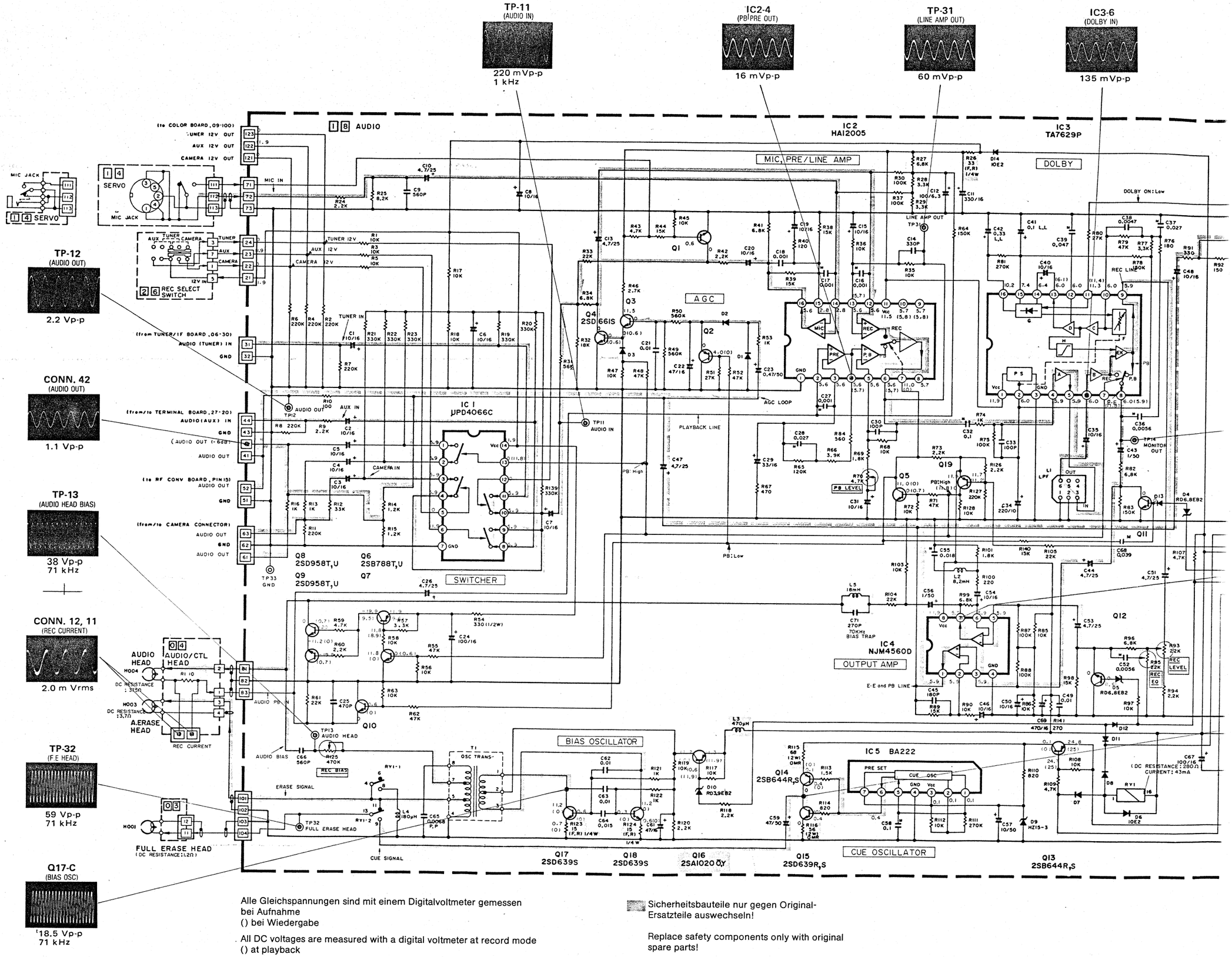
MA150, MA27TA

HZ9A1

RD3.6EB



Audio-Schaltung · Audio circuit



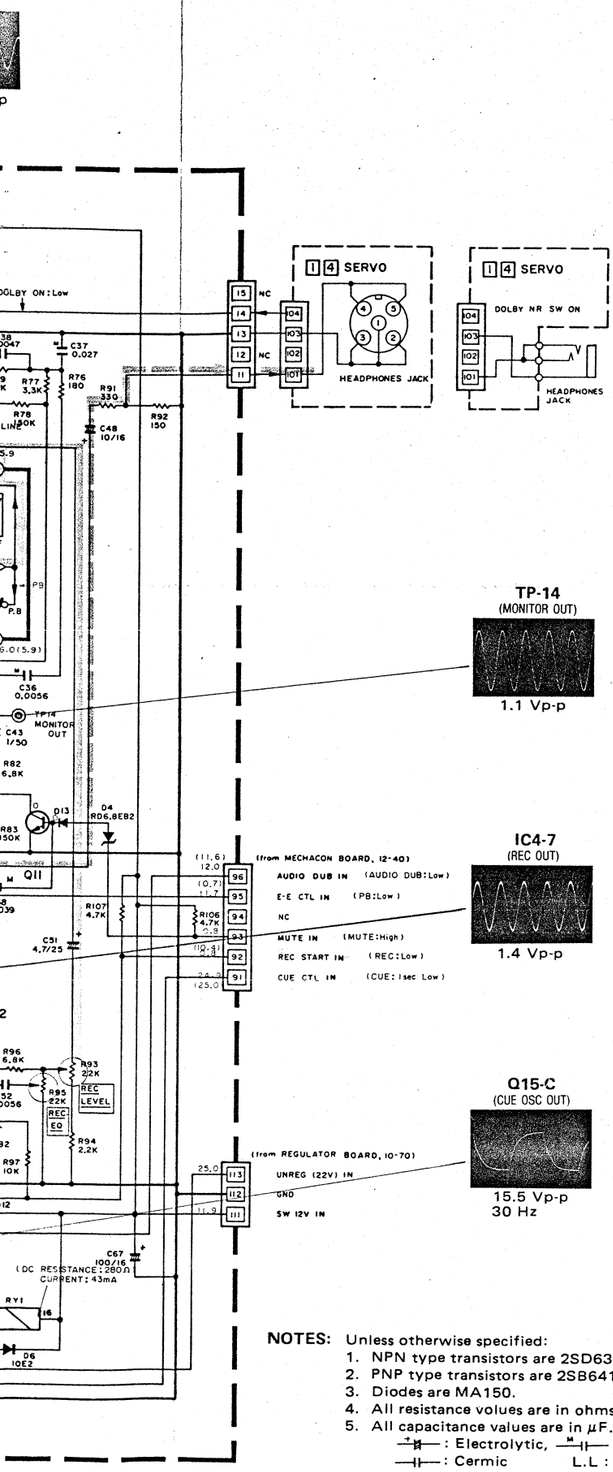
Alle Gleichspannungen sind mit einem Digitalvoltmeter gemessen
bei Aufnahme
() bei Wiedergabe

All DC voltages are measured with a digital voltmeter at record mode
() at playback

Sicherheitsbauteile nur gegen Original-Ersatzteile auswechseln!

Replace safety components only with original spare parts!

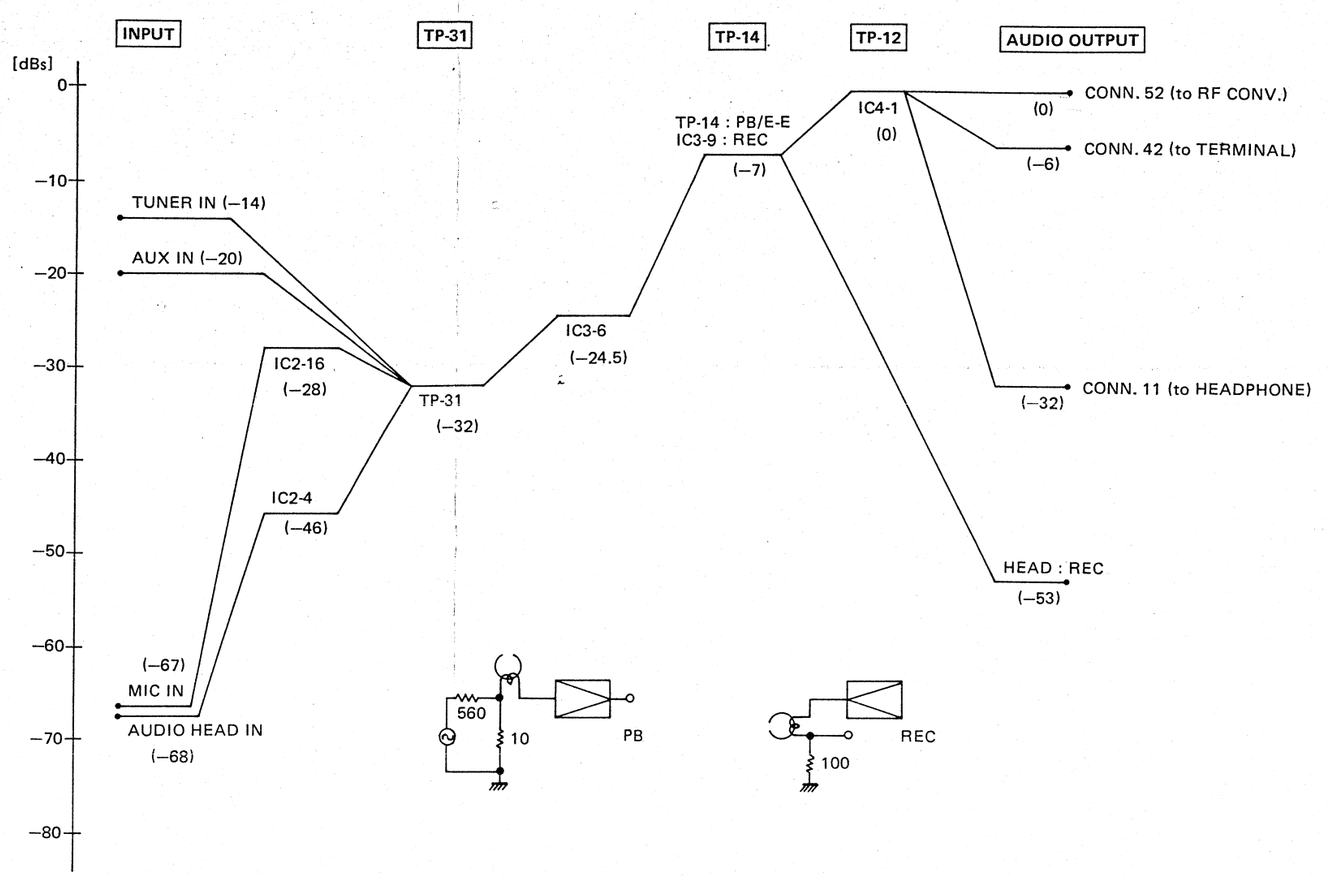
Pegeldiagramm der Audioschaltung · Audio system level diagram



NOTES: Unless otherwise specified:

1. NPN type transistors are 2SD636R, S.
2. PNP type transistors are 2SB641R, S.
3. Diodes are MA150.
4. All resistance volues are in ohms, 1/8 W.
5. All capacitance values are in μF.

—⊣⊢— : Electrolytic, —ᴹ⊣⊢— : MYlar,
—⊣⊢— : Cermic L.L : Low leakage type

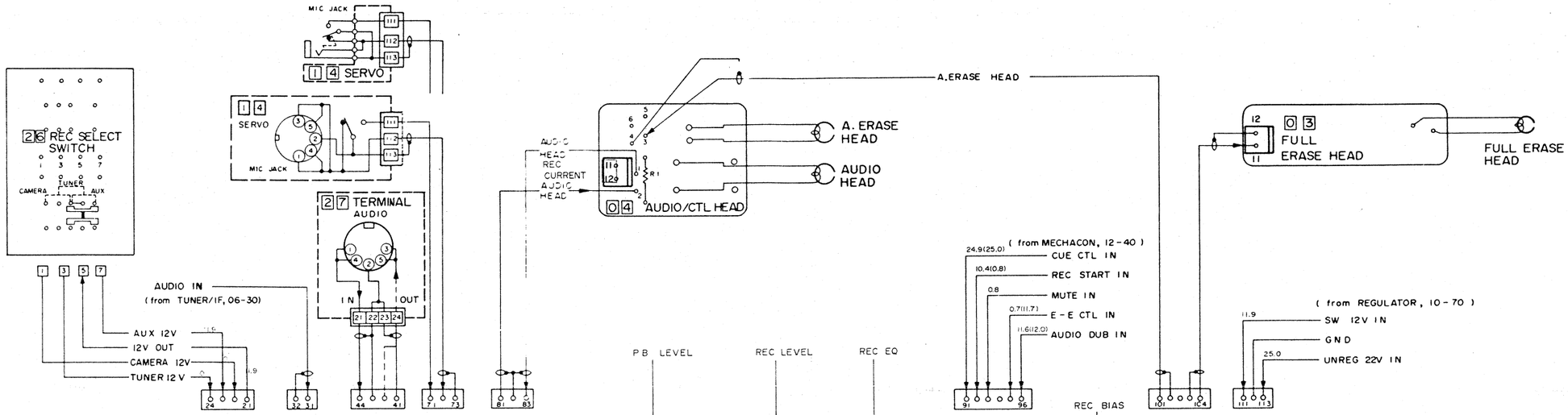


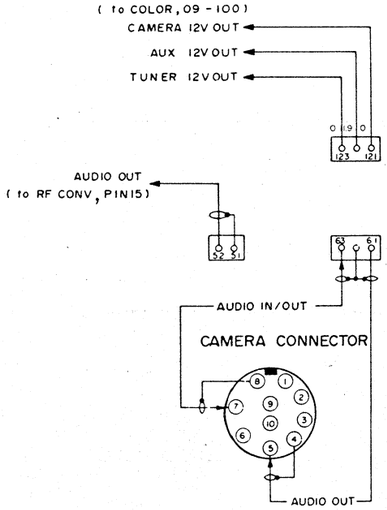
Hinweis:

1. Ein 1-kHz-Sinussignal mit – 20 dB zuführen und auf Aufnahme schalten
2. Das Abgleichband wiedergeben (Audio 1 kHz)

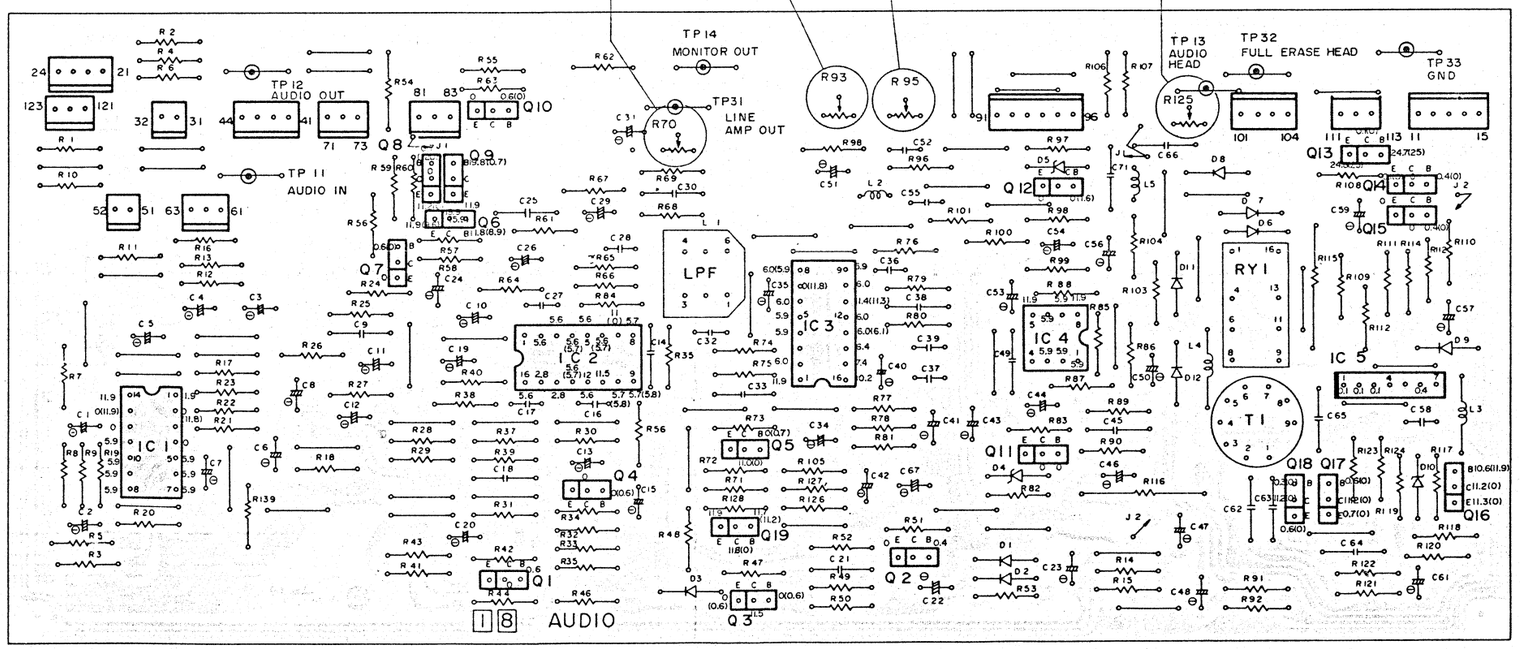
Note:

1. Supply a 1 kHz sinewave signal at – 20 dB, set for the recording mode
2. Play alignment tape (audio 1 kHz)

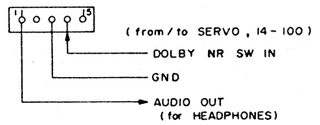


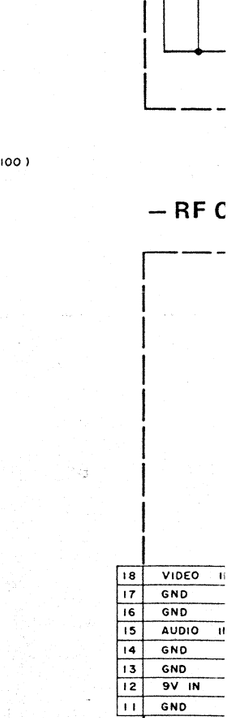


– AUDIO –



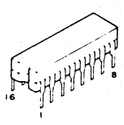
AUDIO BOARD



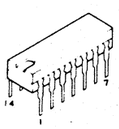


18	VIDEO
17	GND
16	GND
15	AUDIO
14	GND
13	GND
12	9V IN
11	GND

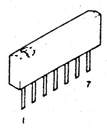
HA12005, TA7629P



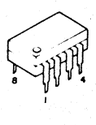
UPD4066C



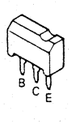
BA222



NJM4560D



2SD636, 2SB641, 2SD661, 2SB788, 2SD958, 2SB644, 2SD639

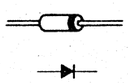


2SA1020

MA150

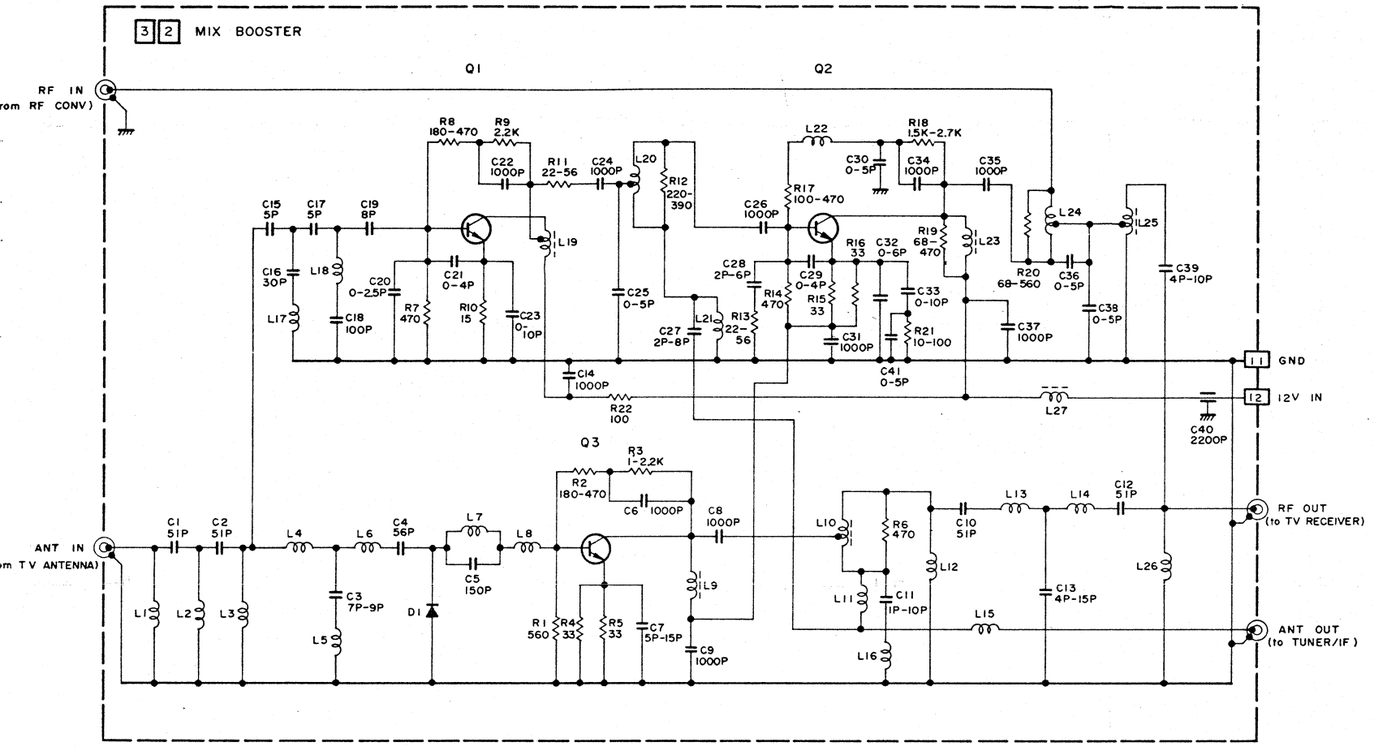
RD6.8EB2, HZ15-3, RD3.9EB2

10E2

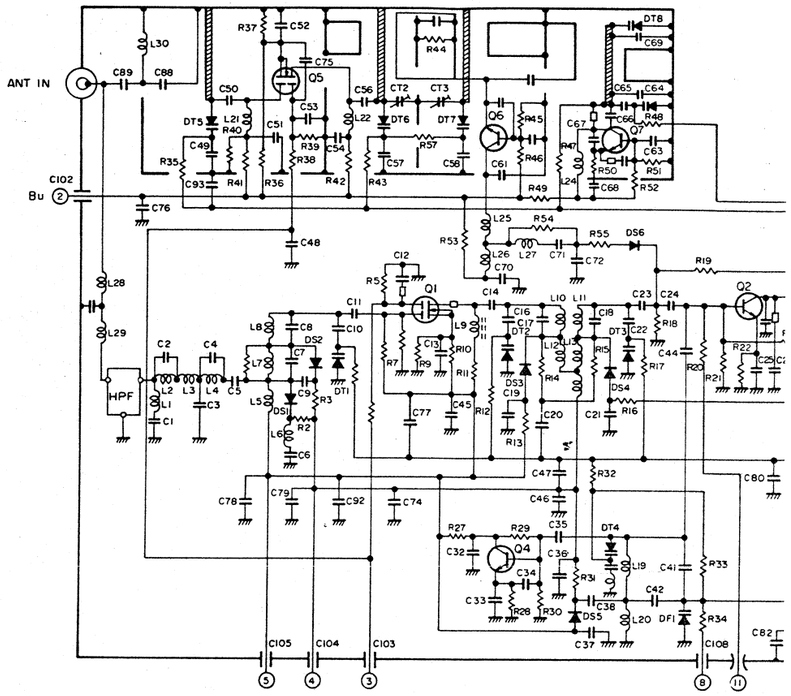


HF-Modulator-, Antennenverstärker/Mischer-, VHF/UHF Tuner- und Fernbedienungs-Schaltungen · RF Converter, Mix Booster, V/U Tuner and Wireless Remote Control Unit Sch

– MIX BOOSTER –

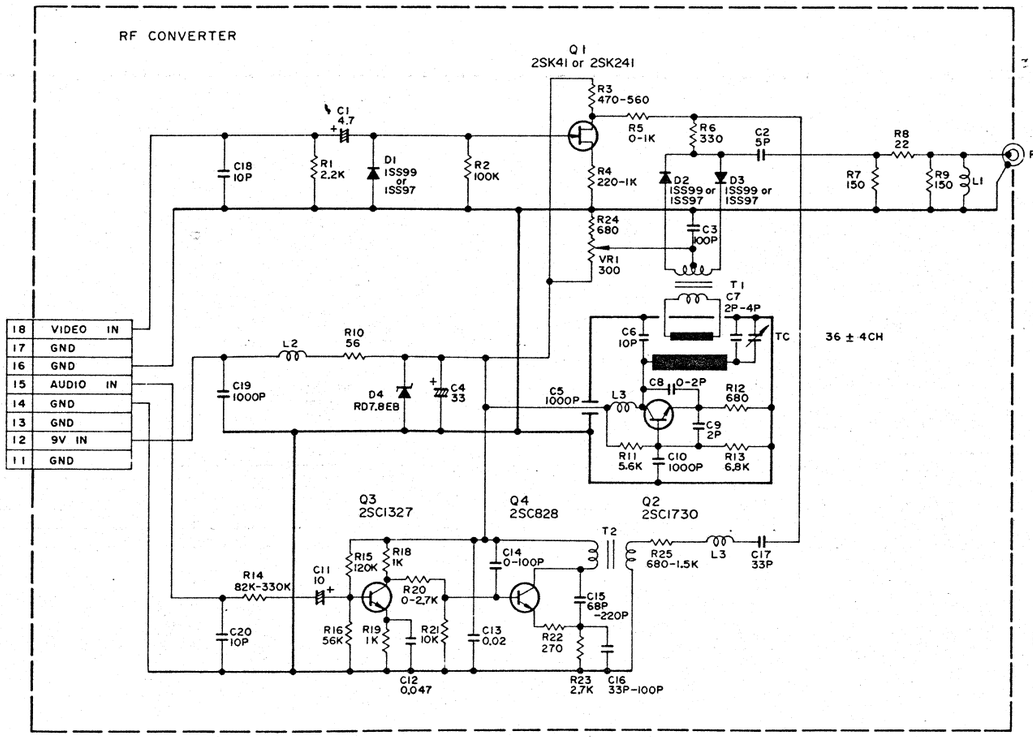


– V/U TUNER SCHEMATIC DIAGRAM –



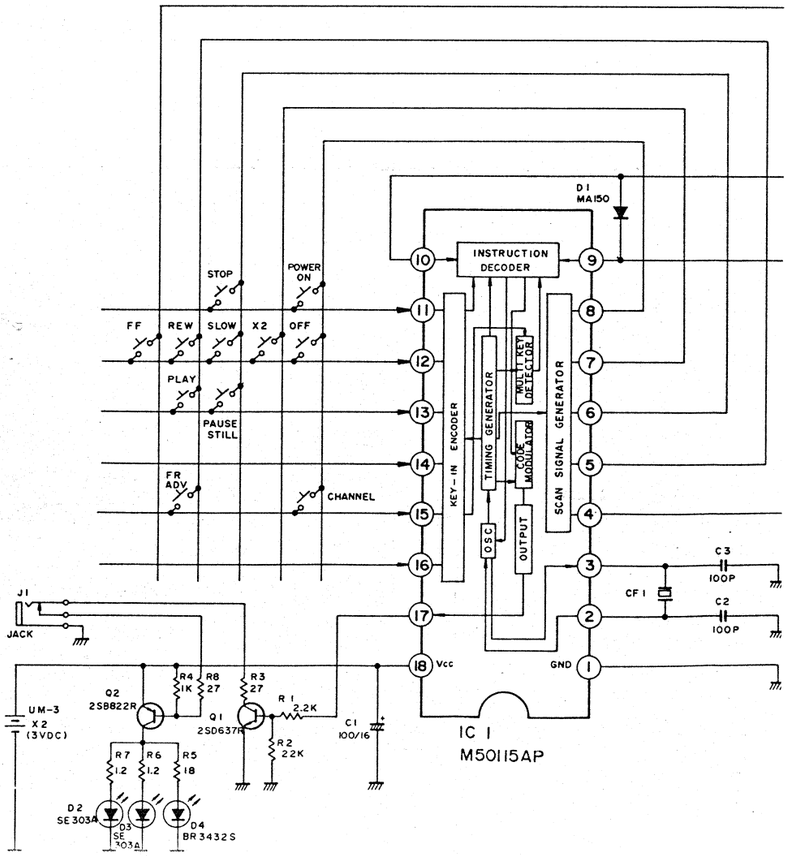
– RF CONVERTER –

NOTES : Unless otherwise specified ;
1. All transistors are 2SC2570A.
2. All diodes are IS2076 or IS2473.
3. All resistance values are in ohms.



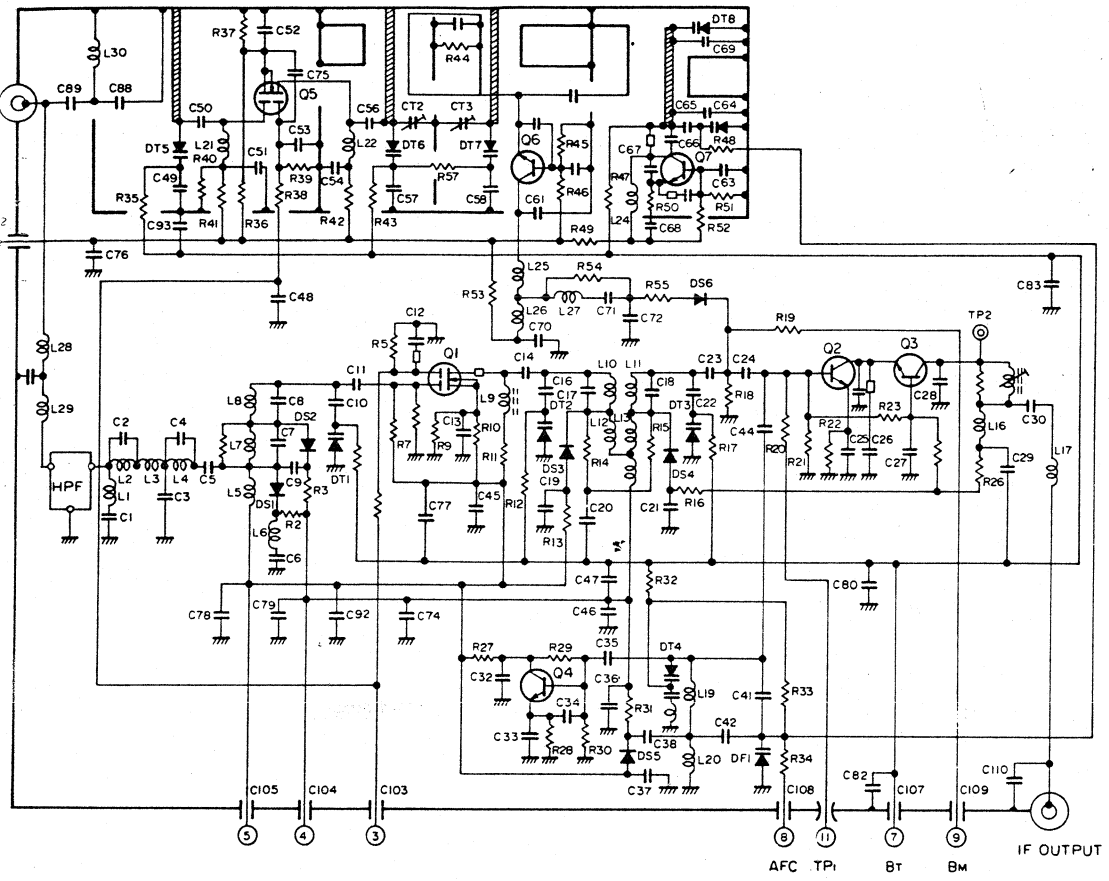
NOTES : Unless otherwise specified ;
1. All resistance values are in ohms.
2. All capacitance values are in μF.

– WIRELESS REMOTE CONTROL UNIT –

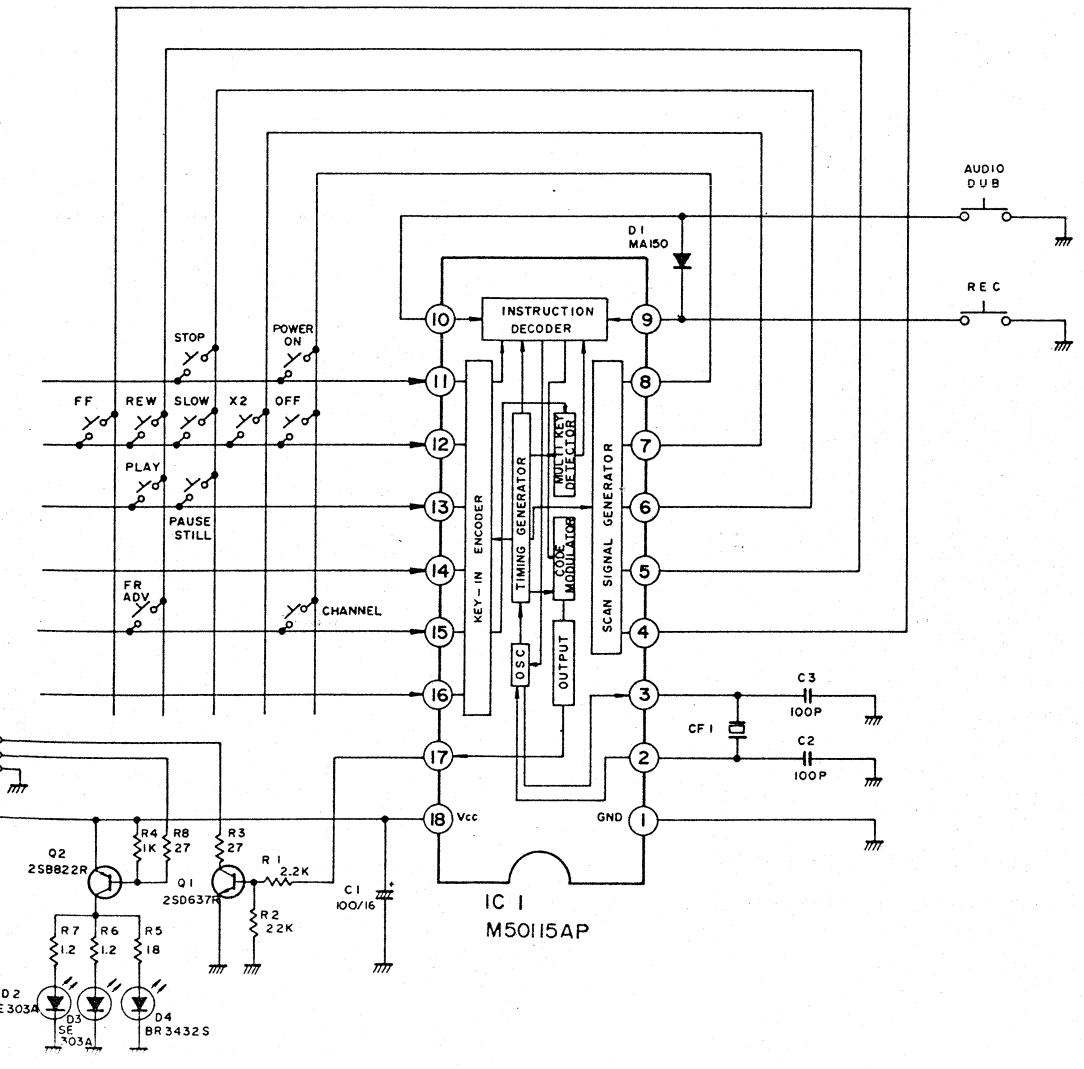


V/U Tuner and Wireless Remote Control Unit Schematic Diagrams

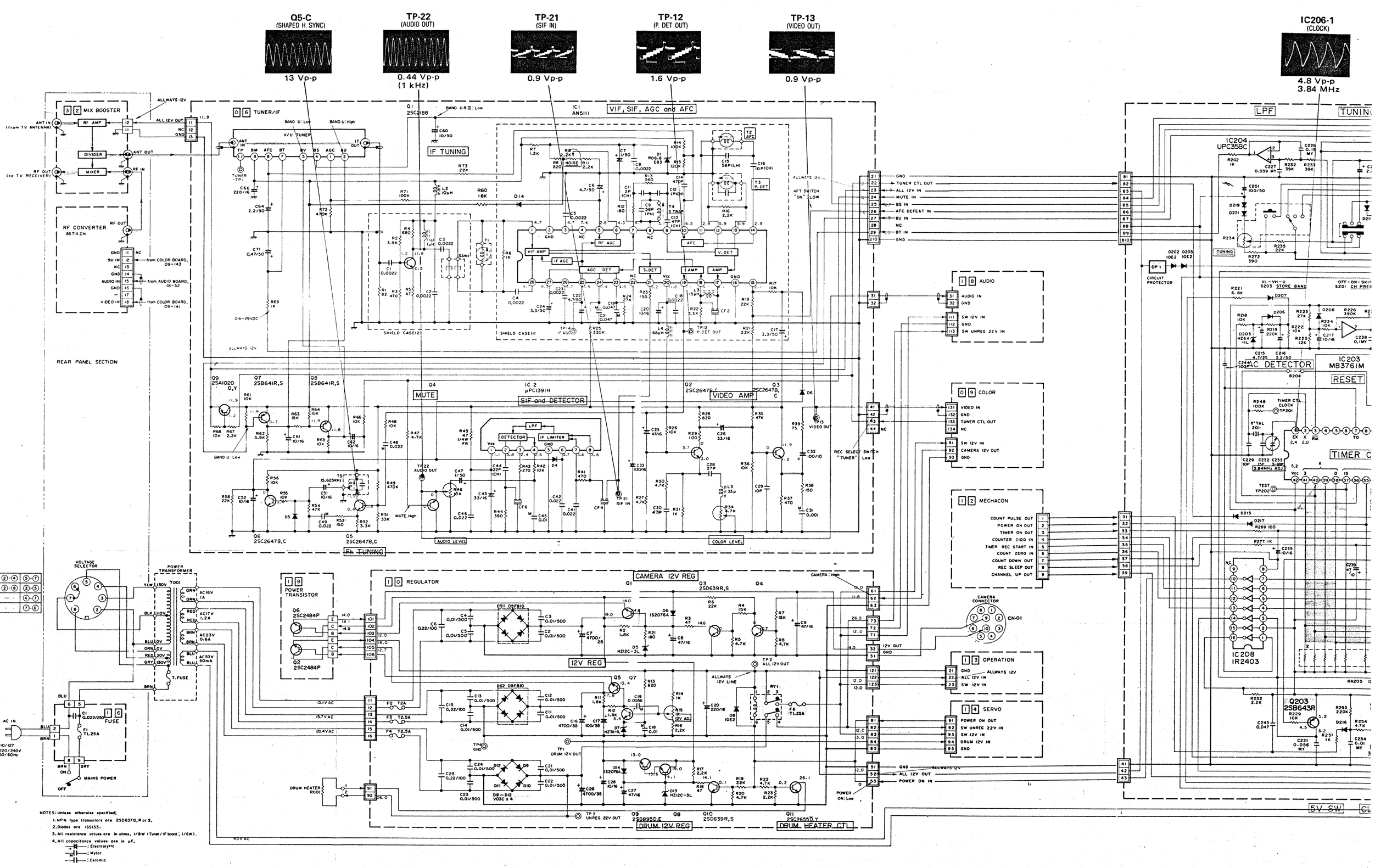
TUNER SCHEMATIC DIAGRAM –



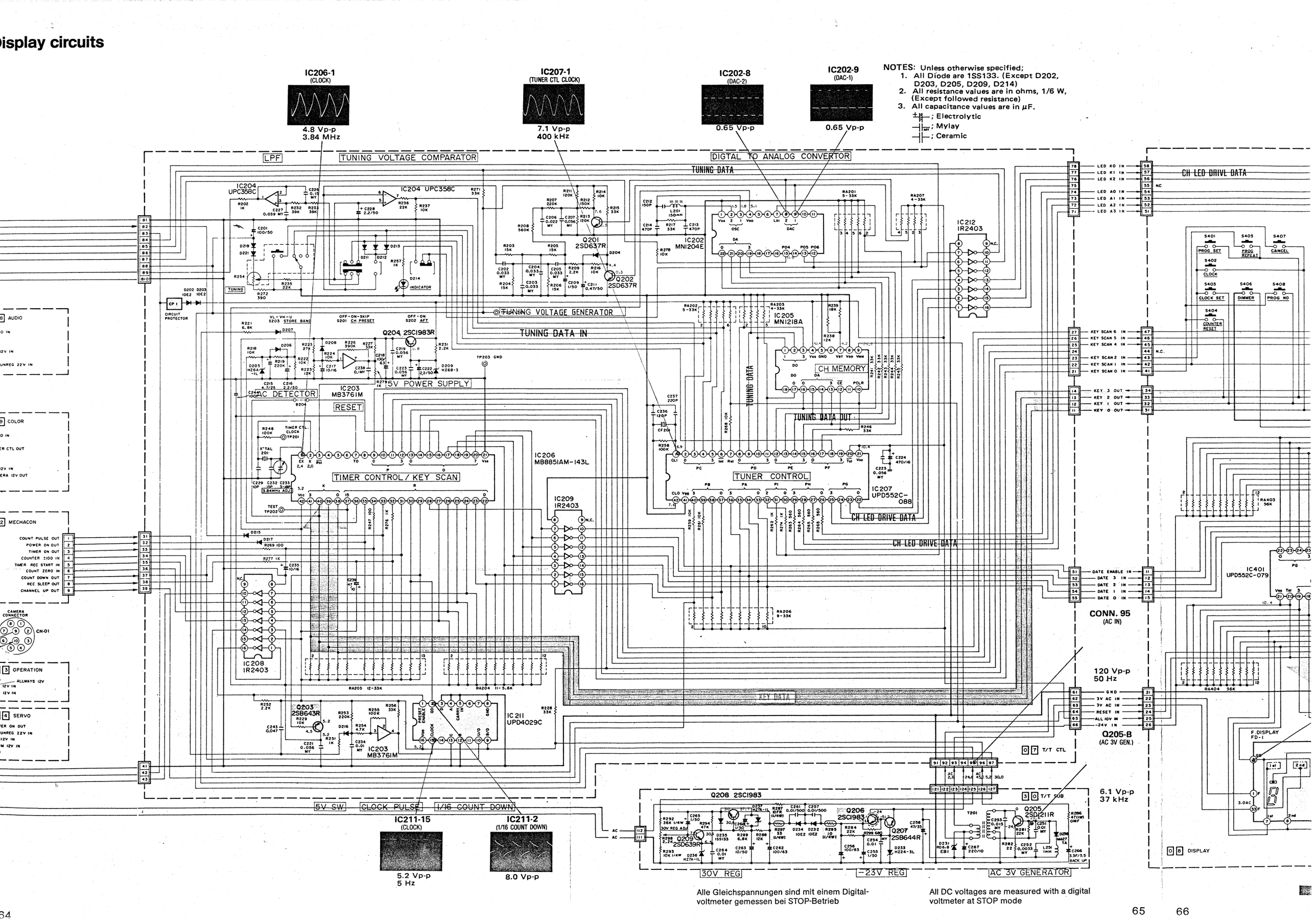
ELESS REMOTE CONTROL UNIT –



Regelnetzteil-, Tuner/ZF-, Tuner/Timer Steuer- und Anzeige-Schaltungen · Regulator, Tuner/IF, Tuner/Timer Control and Display circuits



Display circuits

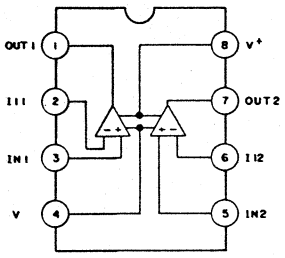


Alle Gleichspannungen sind mit einem Digital-voltmeter gemessen bei STOP-Betrieb

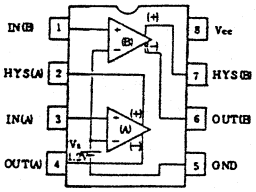
All DC voltages are measured with a digital voltmeter at STOP mode

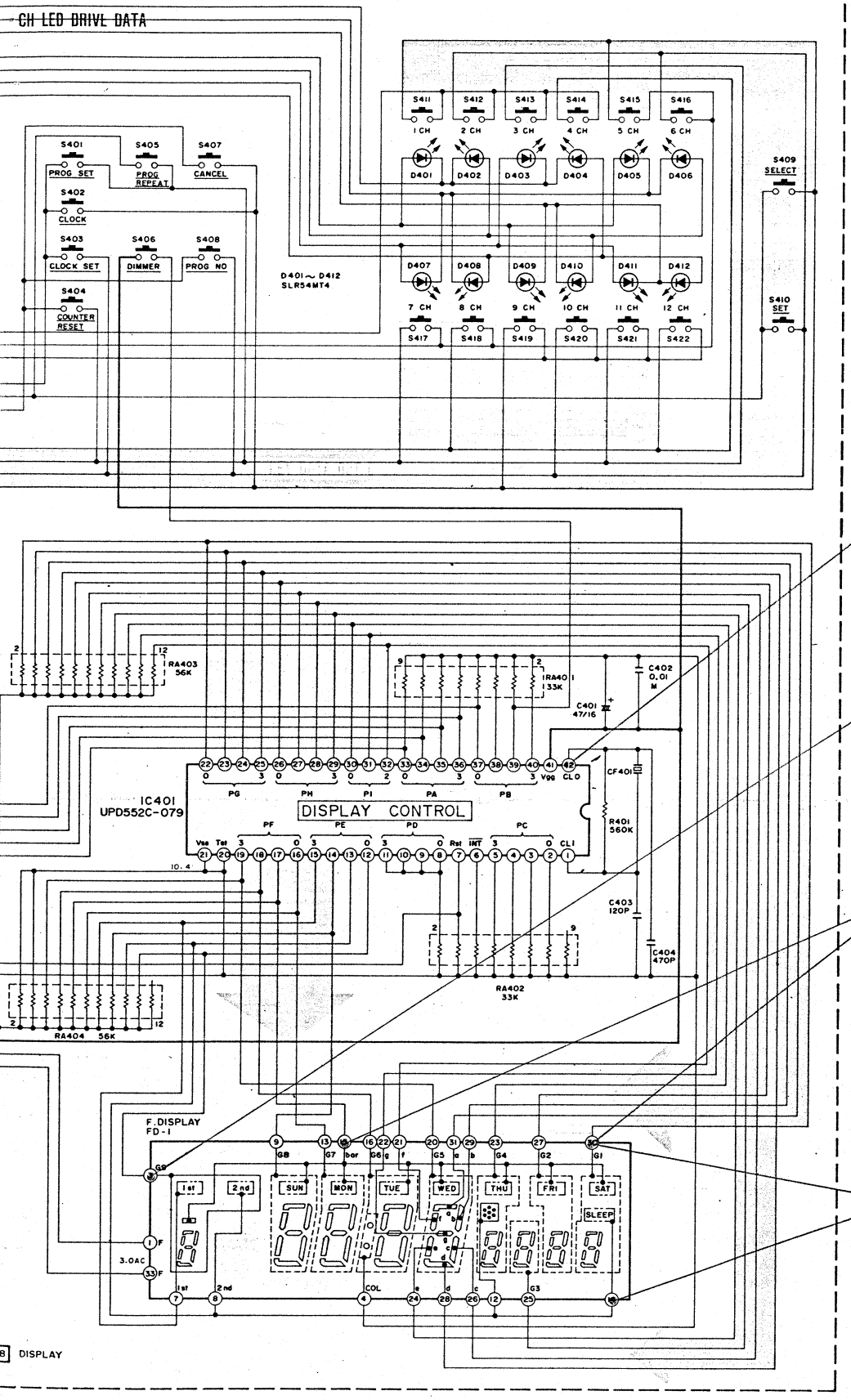
NOTES: Unless otherwise specified;
1. D401—D412 are SLR54MT4.
   D417, 418 are TLS124.
2. All resistance values are in ohms, 1/8 W.
3. All capacitance values are in μF.
   ; Electrolytic
   ; Mylar
   ; Ceramic

– UPC358 –

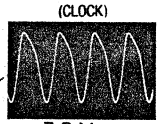


– MB3761M –



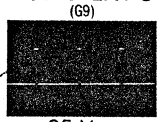


IC401-1
(CLOCK)



7.2 Vp-p
400 kHz

F. DISPLAY-3
(G9)

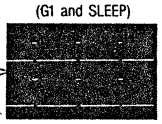


35 Vp-p
50 Hz

F. DISPLAY-30 and 15
(G1 and bar)

35 Vp-p
50 Hz
SAT display

F. DISPLAY-30 and 14
(G1 and SLEEP)

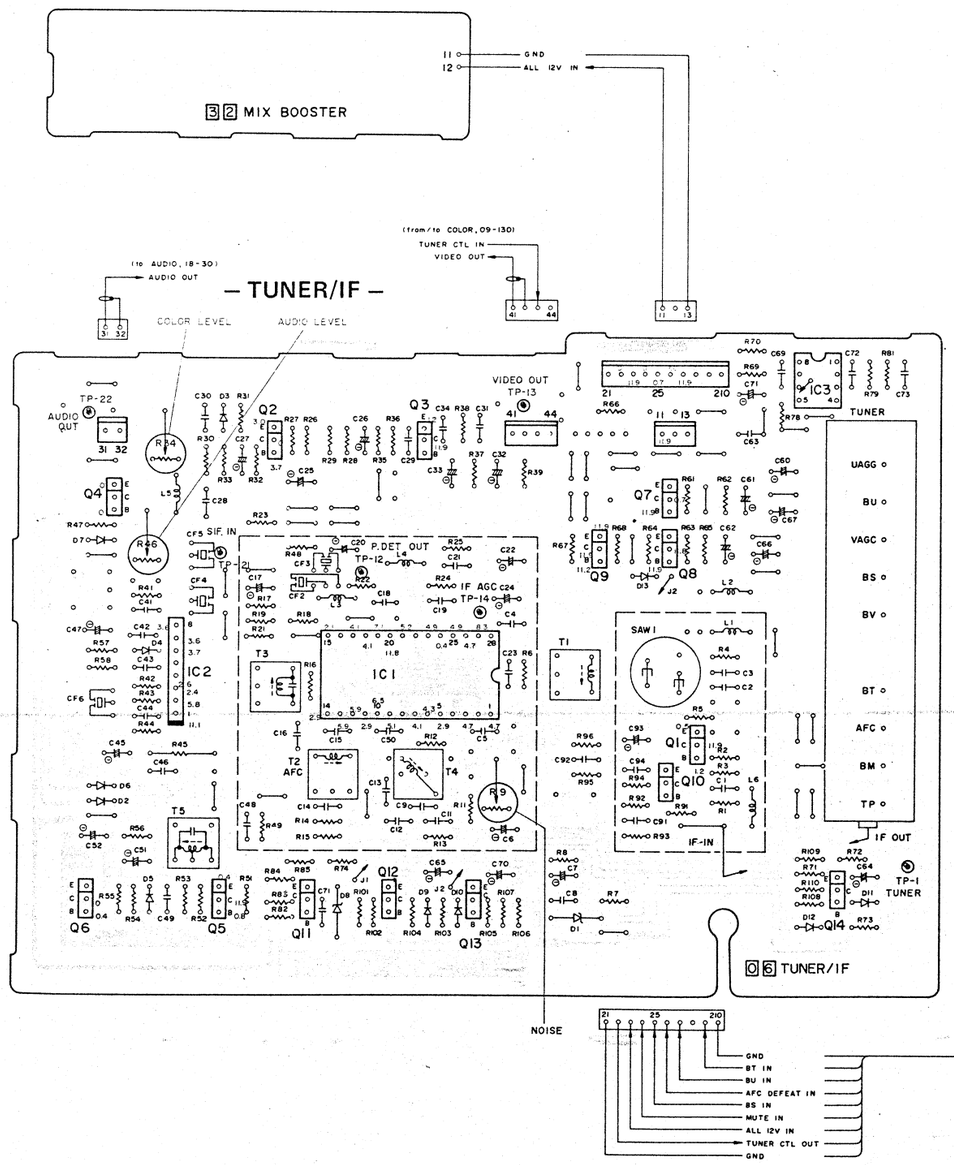


35 Vp-p
50 Hz
SLEEP display

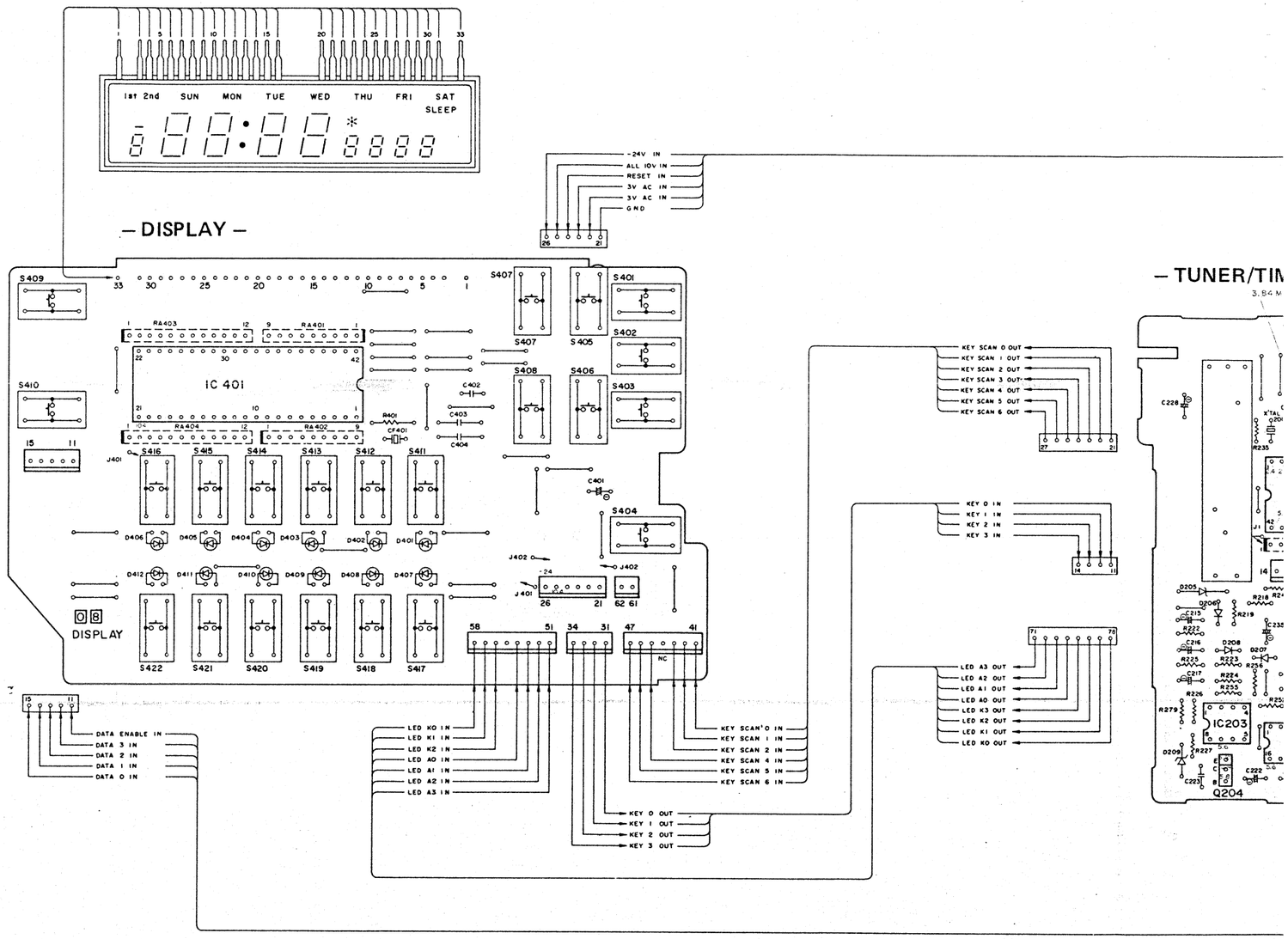
Sicherheitsbauteile nur gegen Original-Ersatzteile auswechseln!

Replace safety components only with original spare parts!

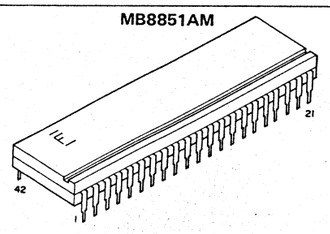
Tuner/ZF-Platte · Tuner/IF circuit board 06



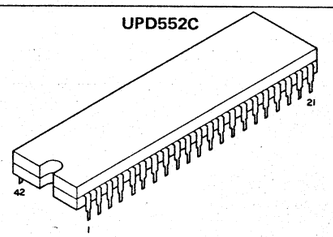
Anzeige-Platte · Display circuit board 08



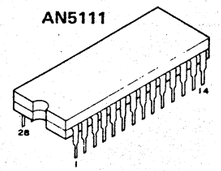
MB8851AM



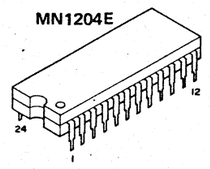
UPD552C



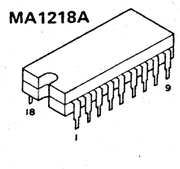
AN5111

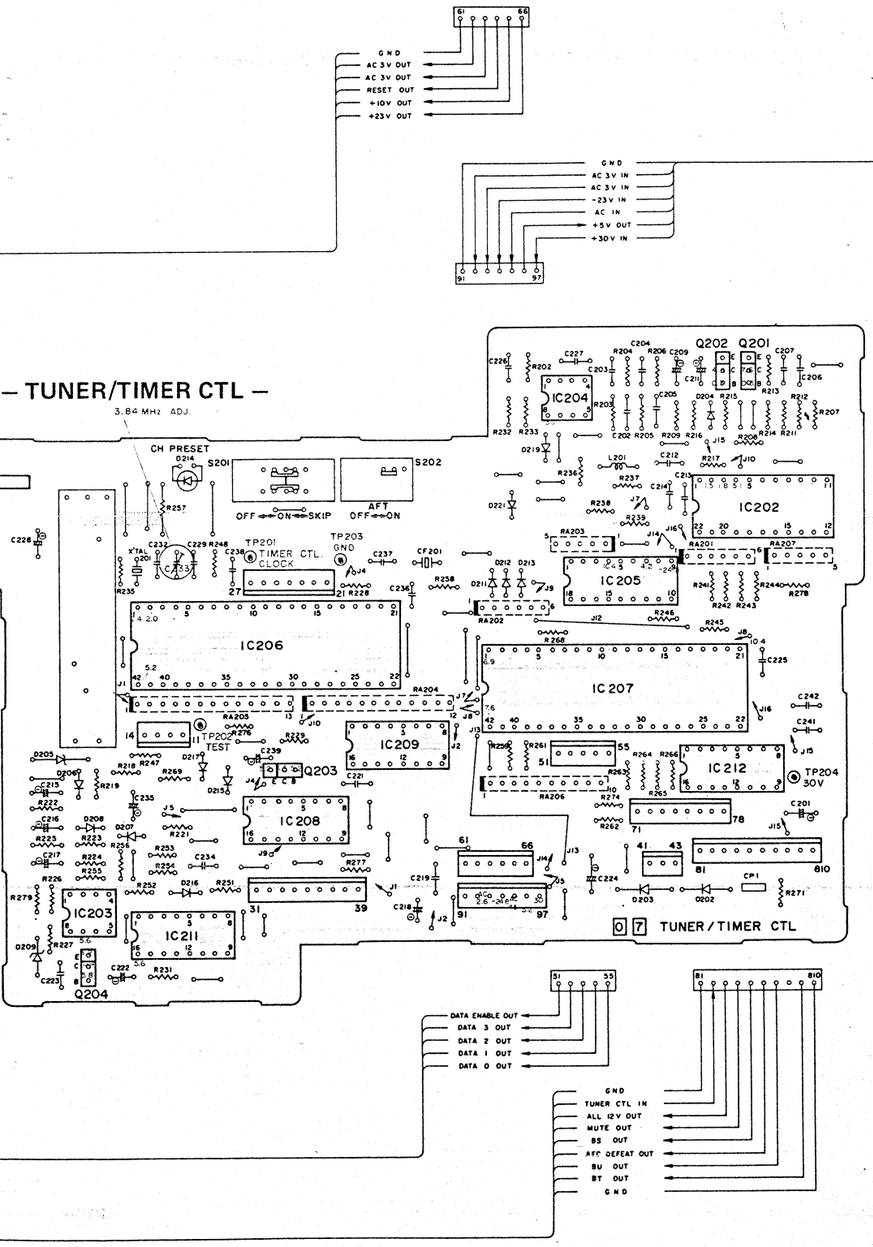


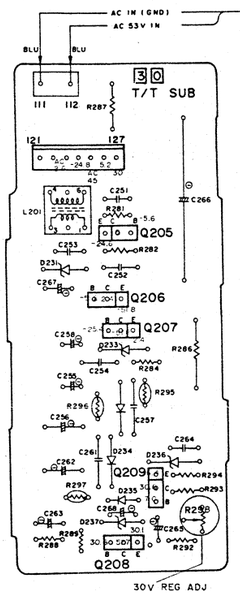
MN1204E

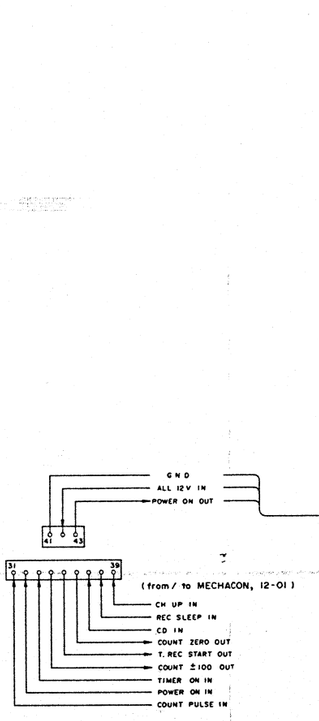


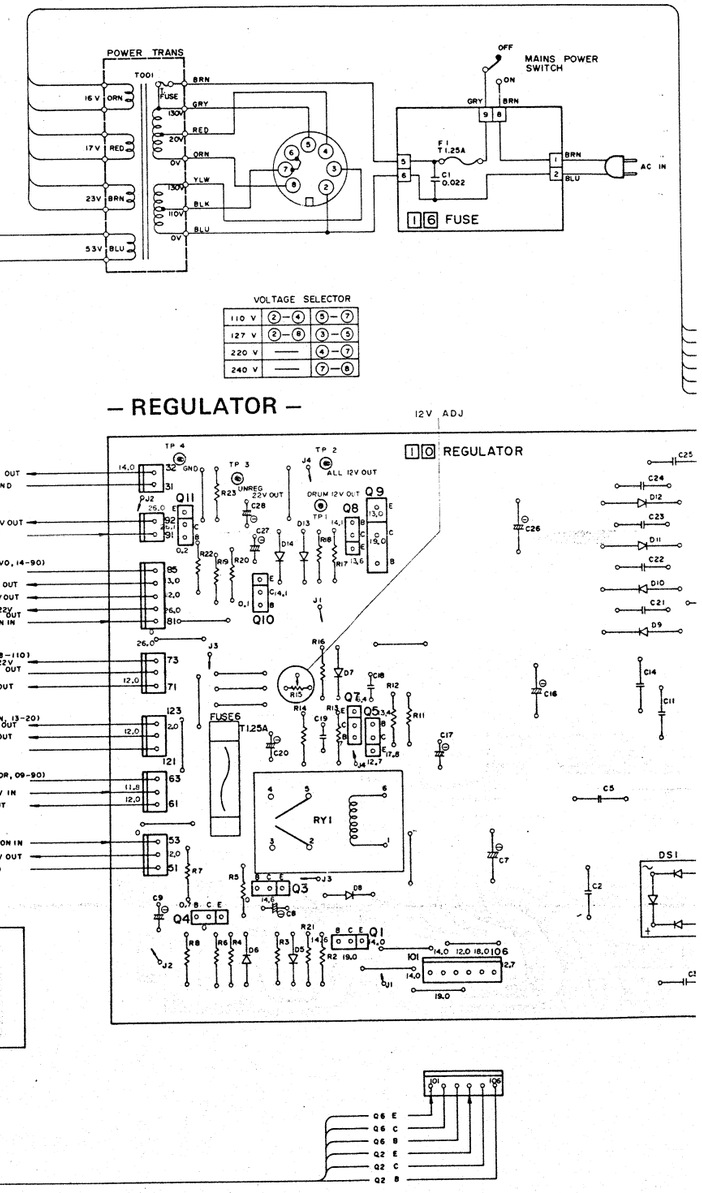
MA1218A

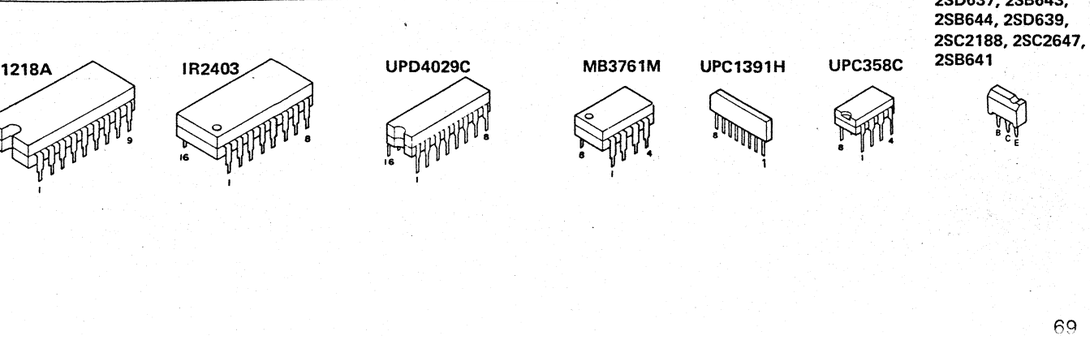


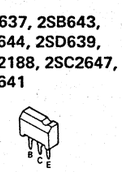

– TUNER/TIMER CTL –
3.84 MHz ADJ.
CH PRESET
S201
S202
OFF ON SKIP
AFT OFF ON
TP201 TIMER CTL CLOCK
TP203 GND
TP202 TEST
TP204 30V
IC204
IC205
IC206
IC207
IC208
IC209
IC211
IC212
IC202
IC203
Q201 Q202
Q203
Q204
07 TUNER/TIMER CTL
GND
AC 3V OUT
AC 3V OUT
RESET OUT
+10V OUT
+23V OUT
GND
AC 3V IN
AC 3V IN
-23V IN
AC IN
+5V OUT
+30V IN
+30V OUT
+5V IN
AC OUT
-23V OUT
AC 3V OUT
AC 3V OUT
GND
DATA ENABLE OUT
DATA 3 OUT
DATA 2 OUT
DATA 1 OUT
DATA 0 OUT
GND
TUNER CTL IN
ALL 12V OUT
MUTE OUT
BS OUT
AFT DEFEAT OUT
BU OUT
BT OUT
GND

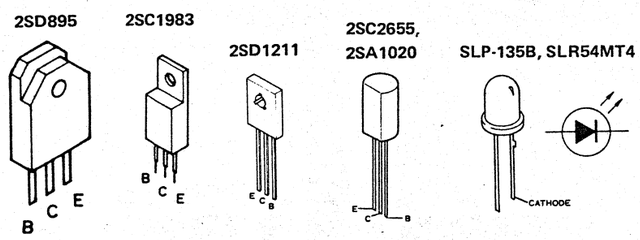

AC IN (GND)
AC 53V IN
30
T/T SUB
Q205
Q206
Q207
Q209
Q208
30V REG ADJ

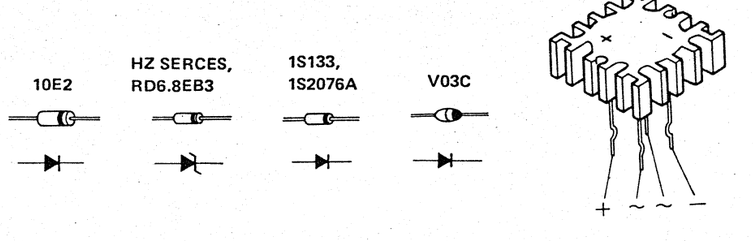

GND
ALL 12V IN
POWER ON OUT
(from / to MECHACON, 12-01)
CH UP IN
REC SLEEP IN
CD IN
COUNT ZERO OUT
T. REC START OUT
COUNT ±100 OUT
TIMER ON IN
POWER ON IN
COUNT PULSE IN

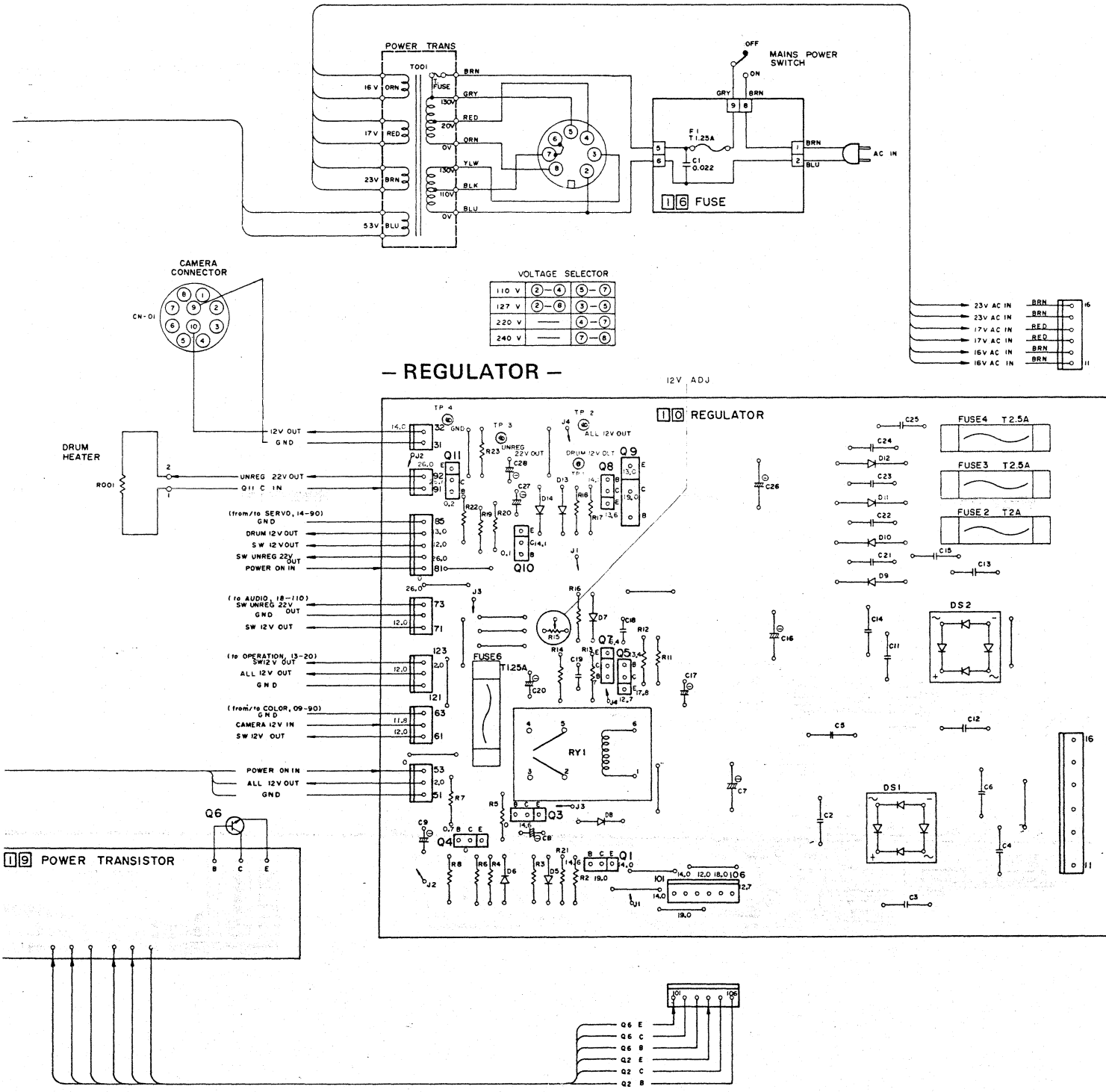

POWER TRANS
MAINS POWER SWITCH
OFF
ON
FUSE
16 FUSE
VOLTAGE SELECTOR
110 V
127 V
220 V
240 V
CAMERA CONNECTOR
– REGULATOR –
10 REGULATOR
12V ADJ
DRUM HEATER
Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11
RY1
FUSE6 T1.25A
19 POWER TRANSISTOR


μPD1218A
IR2403
UPD4029C
MB3761M
UPC1391H
UPC358C

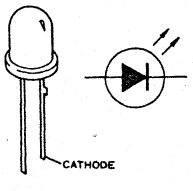

2SD637, 2SB643,
2SB644, 2SD639,
2SC2188, 2SC2647,
2SB641
B C E


2SD895
2SC1983
2SD1211
2SC2655,
2SA1020
SLP-135B, SLR54MT4
CATHODE

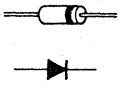

10E2
HZ SERCES,
RD6.8EB3
1S133,
1S2076A
V03C
D5FB10



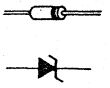
SLP-135B, SLR54MT4



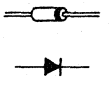
10E2



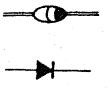
HZ SERCES, RD6.8EB3



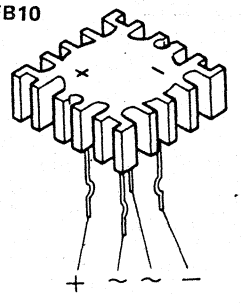
1S133, 1S2076A

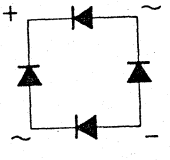


V03C

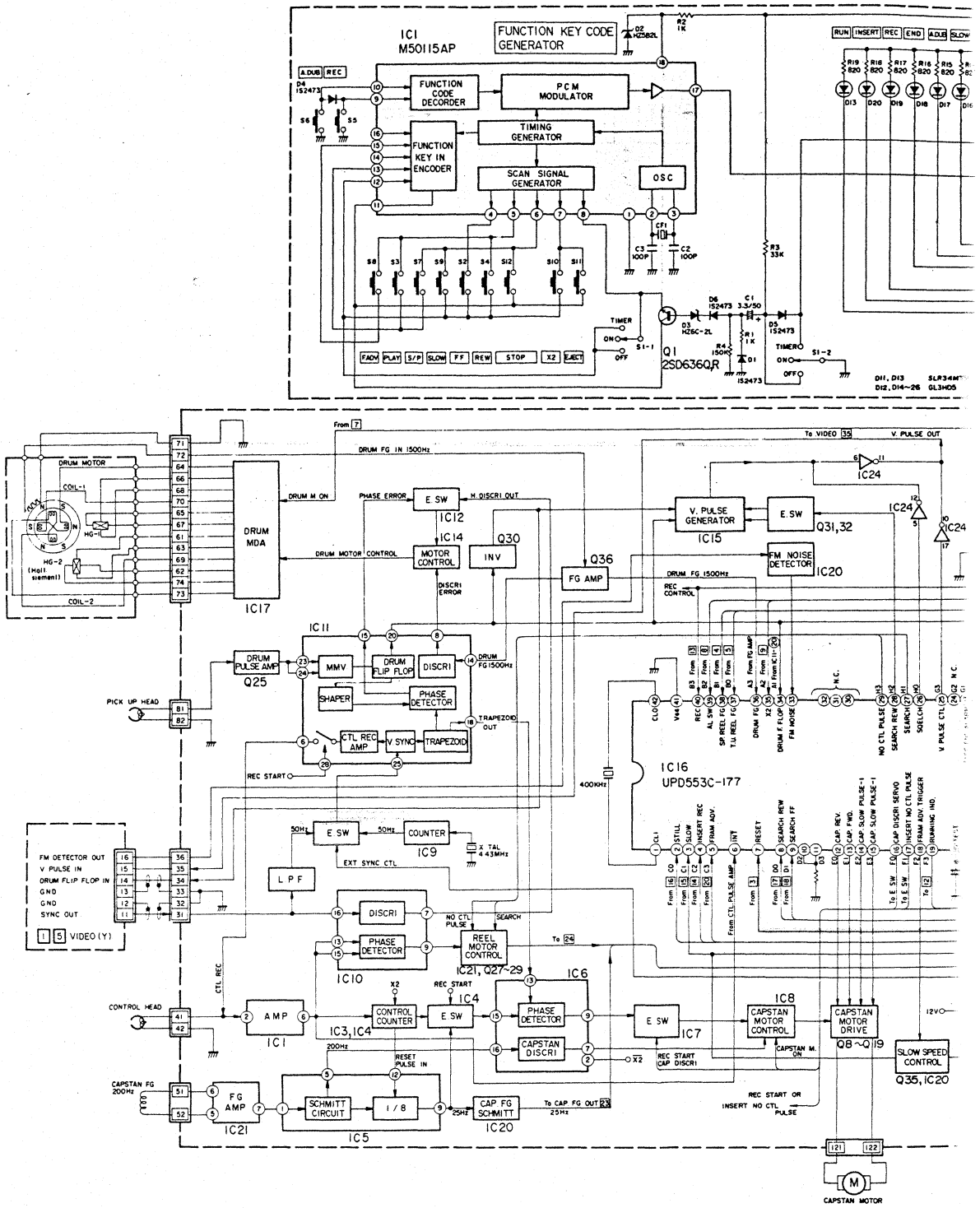


D5FB10





Mechaniksteuerung – Blockdarstellung · Mechacon block diagram



Blockdarstellung · Mechacon block diagram

CONN. 104
8.5 Vp p

CONN. 29
14 Vp-p

IC1-15
(OPERATION CODE)
8.5 Vp-p
91 Hz
(STOP KEY ON)

IC2-3
9 Vp-p
454.5 kHz

IC1
M50115AP

FUNCTION KEY CODE GENERATOR

FUNCTION CODE DECORDER

PCM MODULATOR

TIMING GENERATOR

FUNCTION KEY IN ENCODER

SCAN SIGNAL GENERATOR

OSC

OPERATION CODE

1 3 OPERATION

1 0 REGURATOR

INFERARED RECIEVER

IC1 M51014

SERIAL TO PARALLEL PECORDER

IC2
M50127AP

POWER ON

IC16
UPD553C-177

REEL MOTOR CONTROL

CAPSTAN MOTOR CONTROL

CAPSTAN MOTOR DRIVE

SLOW SPEED CONTROL

CAPSTAN MOTOR

1 8 AUDIO

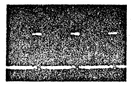
0 7 T/T

0 9 COLOR

IC5-15

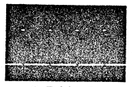
9.2 Vp-p

IC5-12



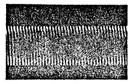
8.8 Vp-p

IC5-33



8.5 Vp-p

IC5-1



4.8 Vp-p
400 kHz

EXPANDER DATA IN

EXPANDER DATA OUT

IC5 CPU UPD553C-185

Q1~Q9 2SA1020 O,Y

IC3 TMS1025N2LL INPUT EXPANDER

IC4 TMS1025N2LL OUTPUT EXPANDER

IC10 TC4050BP

IC6 UPC339C

RESET PULSE GENERATOR

COUNTER ZERO

REMOTE AMP.

S. REEL FG AMP.

T.U. REEL FG AMP.

BRAKE SOLENOID DRIVE

PINCH SOLENOID DRIVE

LOADING MOTOR CONTROL

CASSETTE MOTOR CONTROL

REEL MOTOR DRIVE

REEL MOTOR SPEED CONTROL

REG

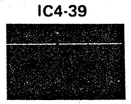
REMOTE CONTROL UNIT

1 2 MECHACON

2 9 JUNCTION

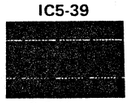
2 8 CASSETTE PHOT INTERRUPTER

IC4-39



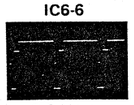
9.8 Vp-p

IC5-39



8.5 Vp-p
REMOTE STOP KEY ON

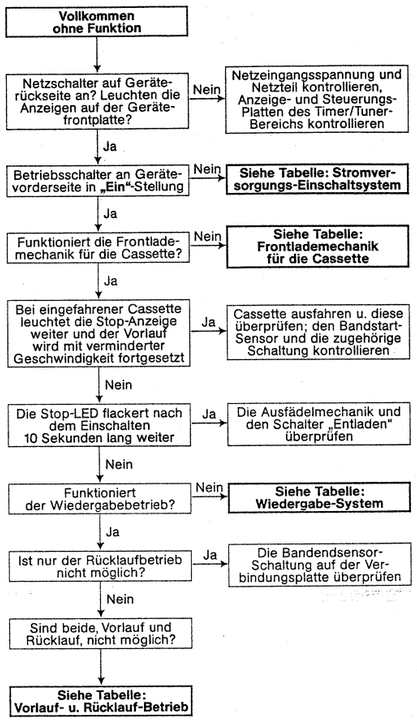
IC6-6



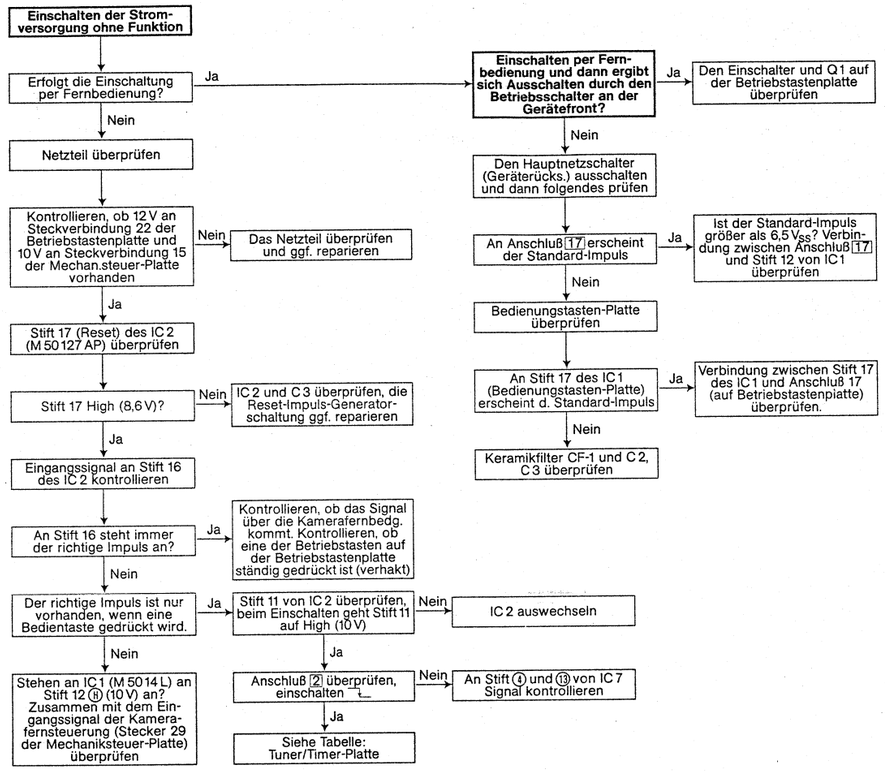
8.8 Vp-p
REMOTE STOP KEY ON

Fehlersuchtabellen für die Mechaniksteuerung

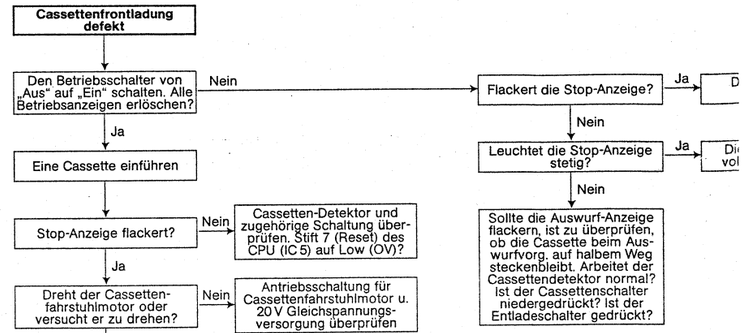
1. Allgemein



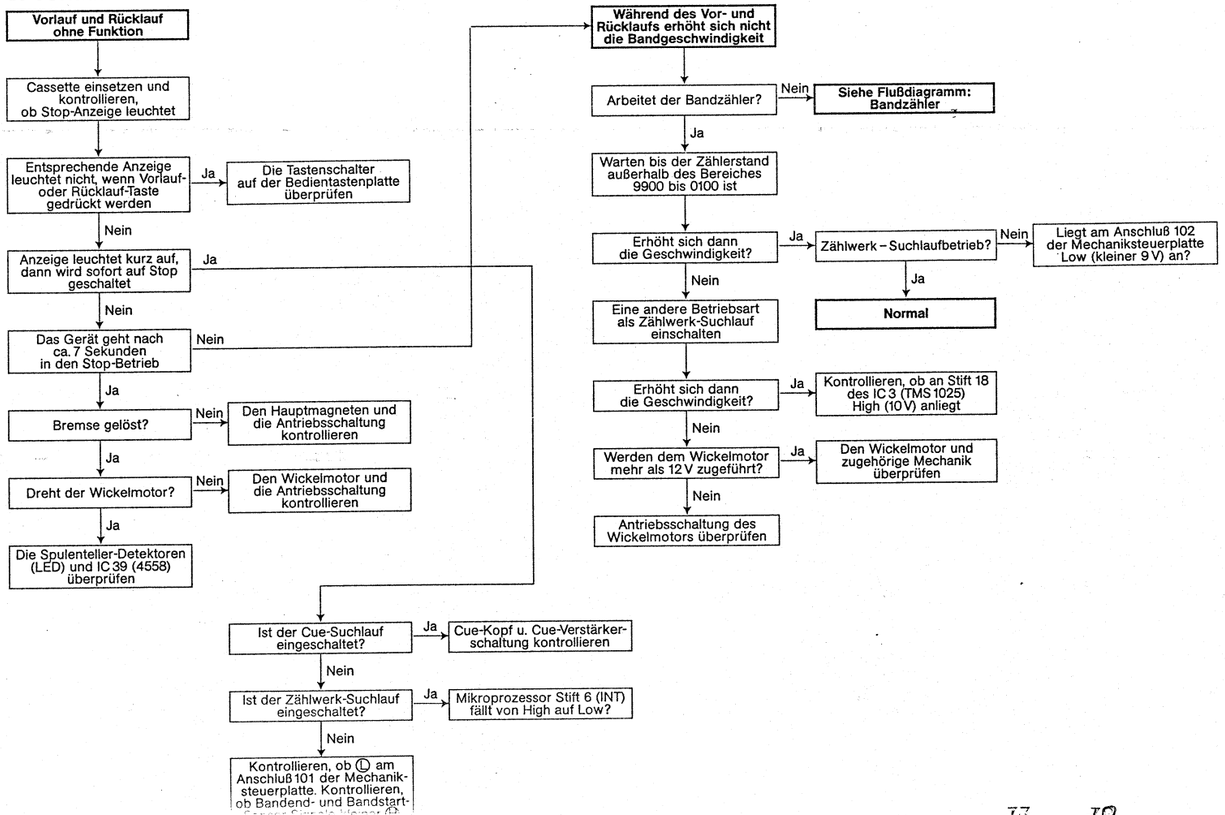
2. Stromversorgungs-Einschaltsystem



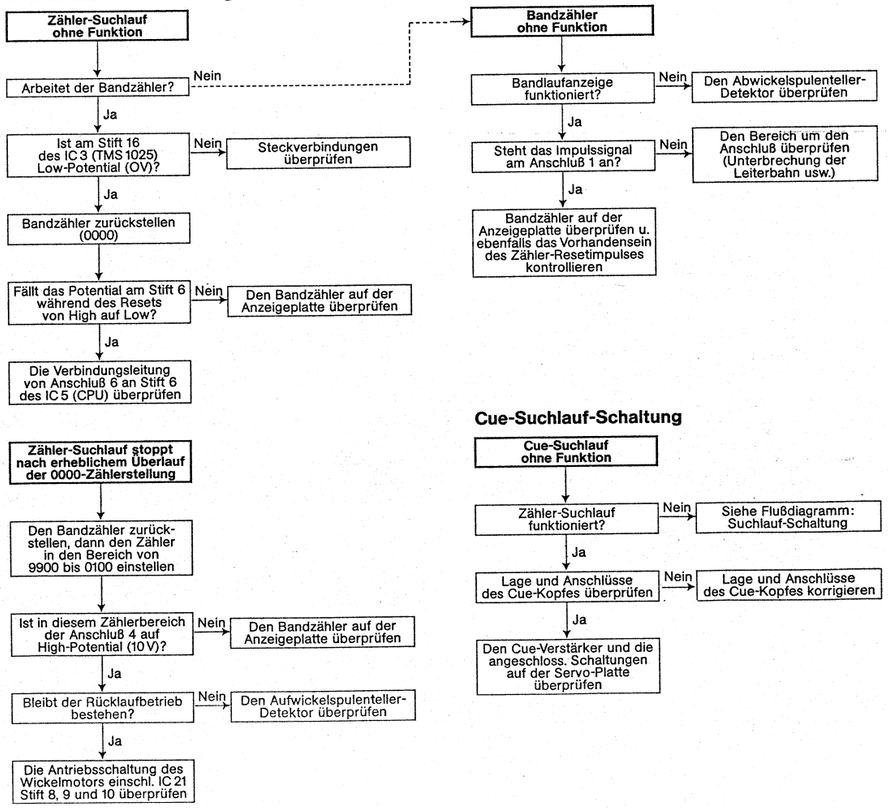
3. Frontlademechanik für die Cassette



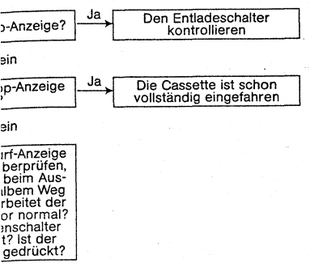
5. Vorlauf- und Rücklauf-Schaltung

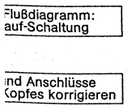


6. Suchlauf-Schaltung



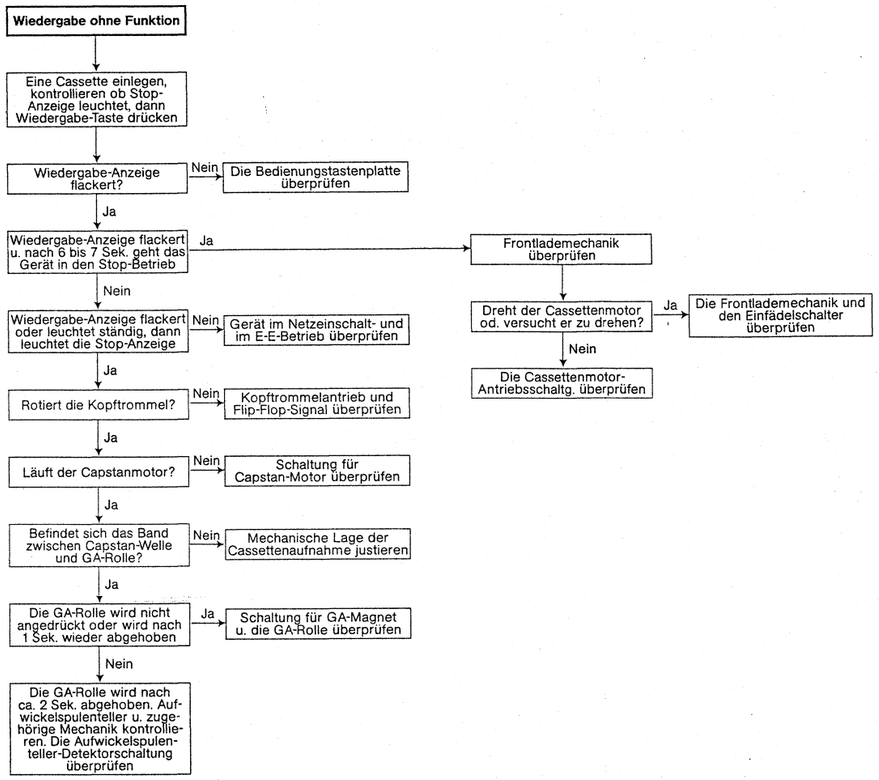
Cue-Suchlauf-Schaltung



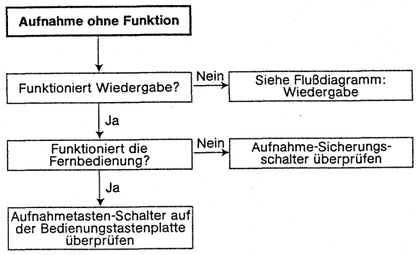


4. Aufnahme- und Wiedergabe-Schaltung

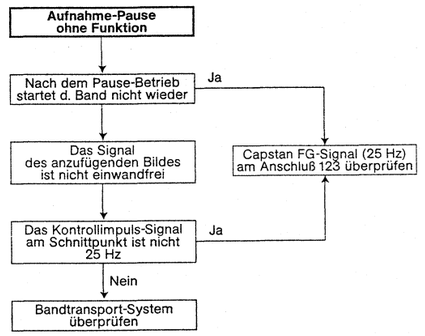
4.1 Wiedergabe-Schaltung



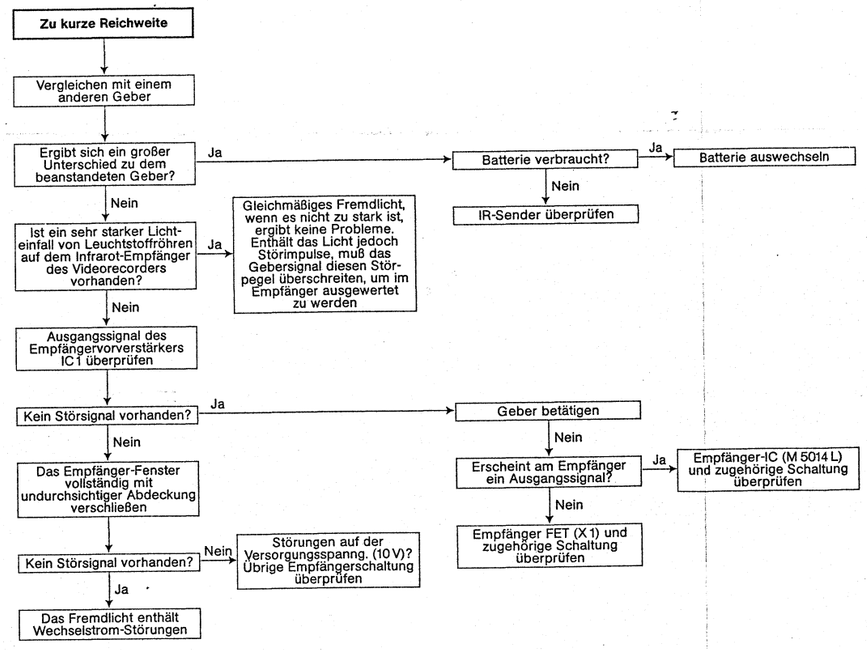
4.2 Aufnahme-Schaltung



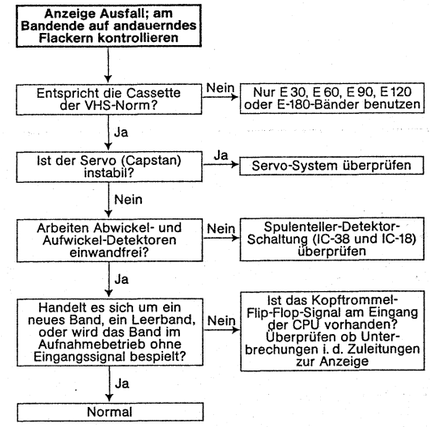
4.3 Aufnahme-Pause-Schaltung



7. Infrarot Fernbedienung

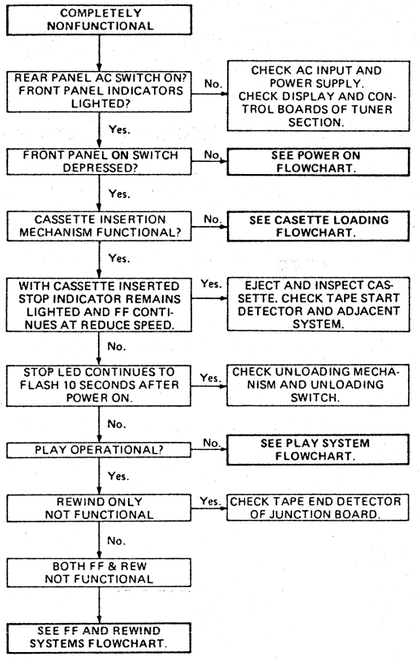


8. Bandlaufanzeige (Servo CPU)

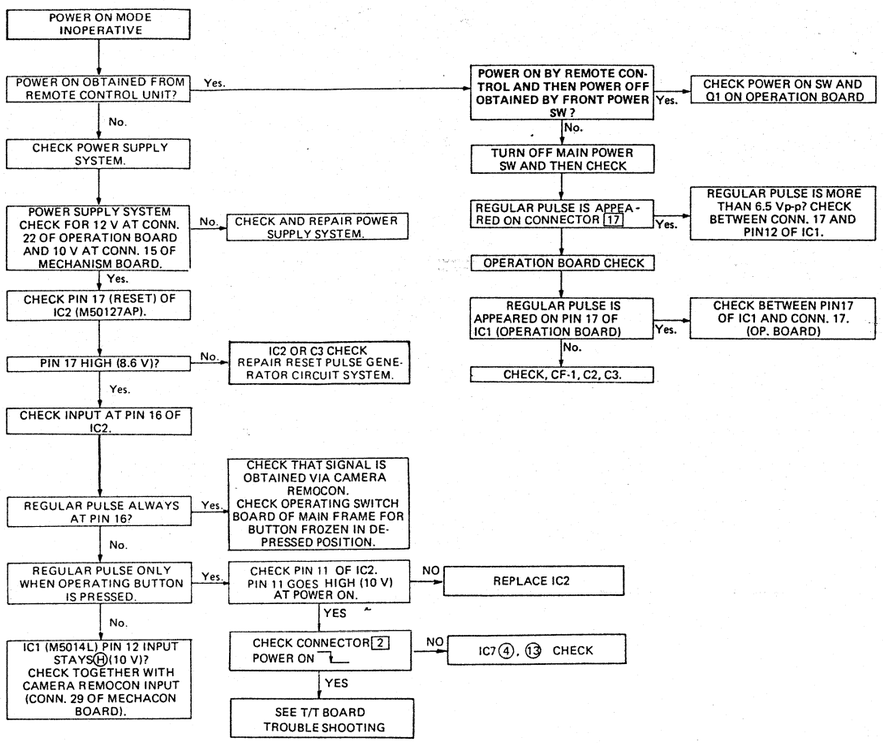


Mechacon trouble shooting guide

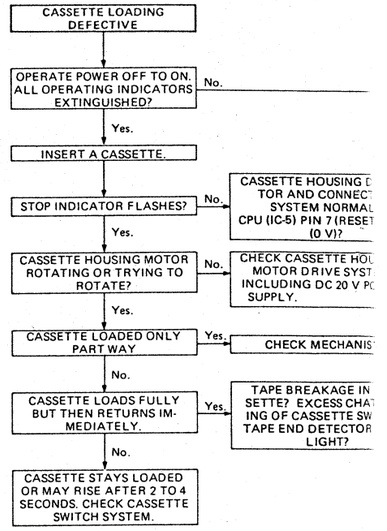
1. OVERALL



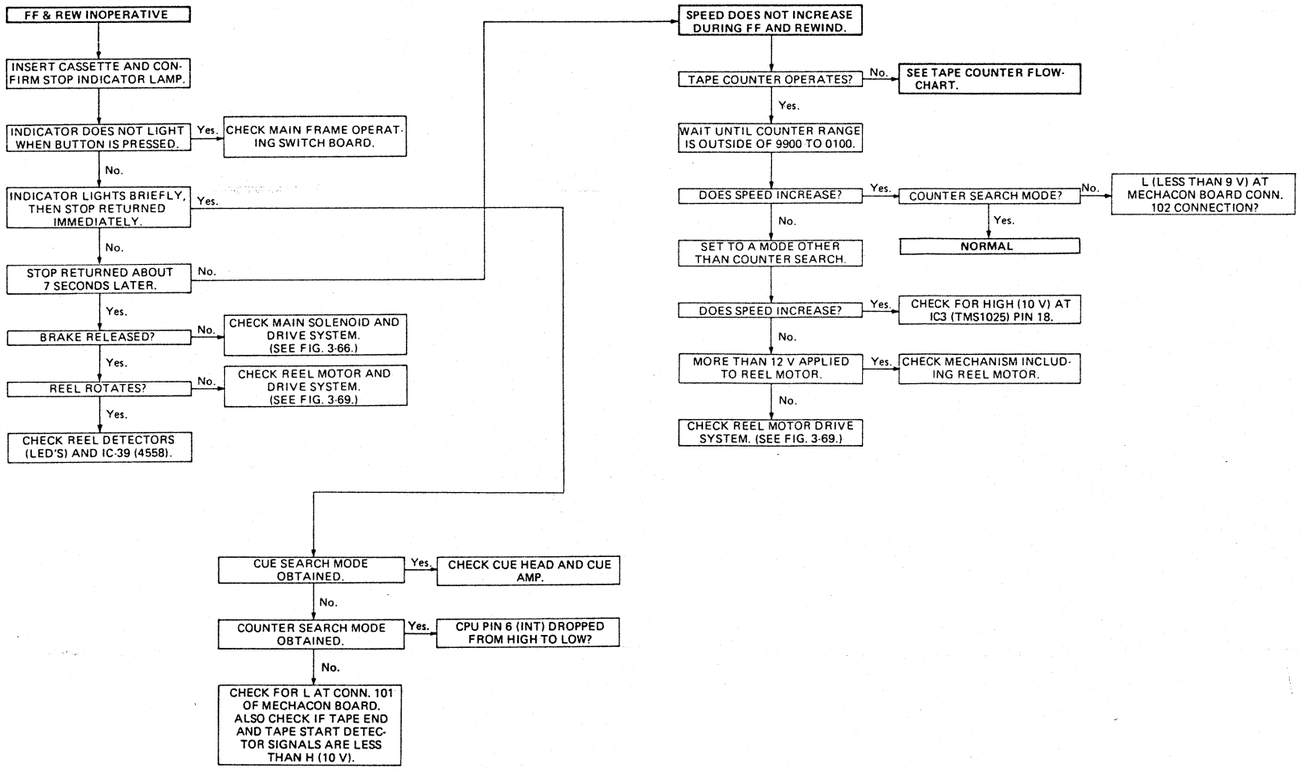
2. POWER ON SYSTEM



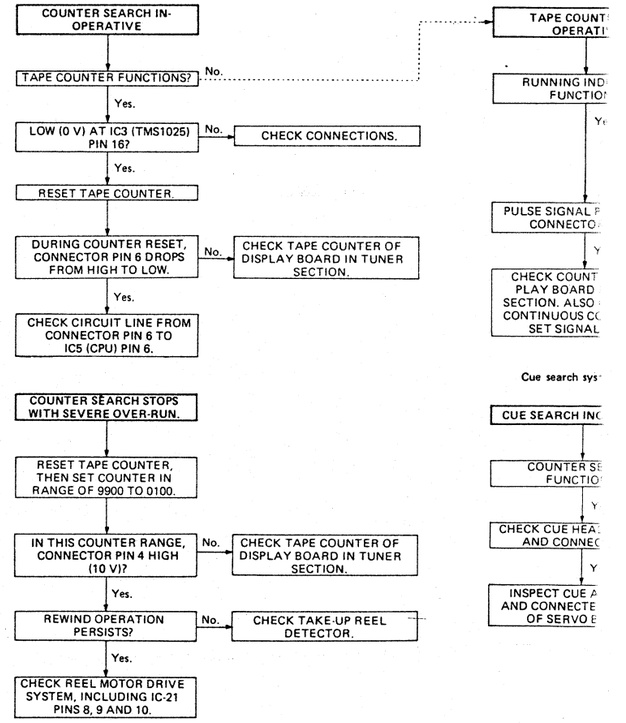
3. CASSETTE LOADING SYSTEM



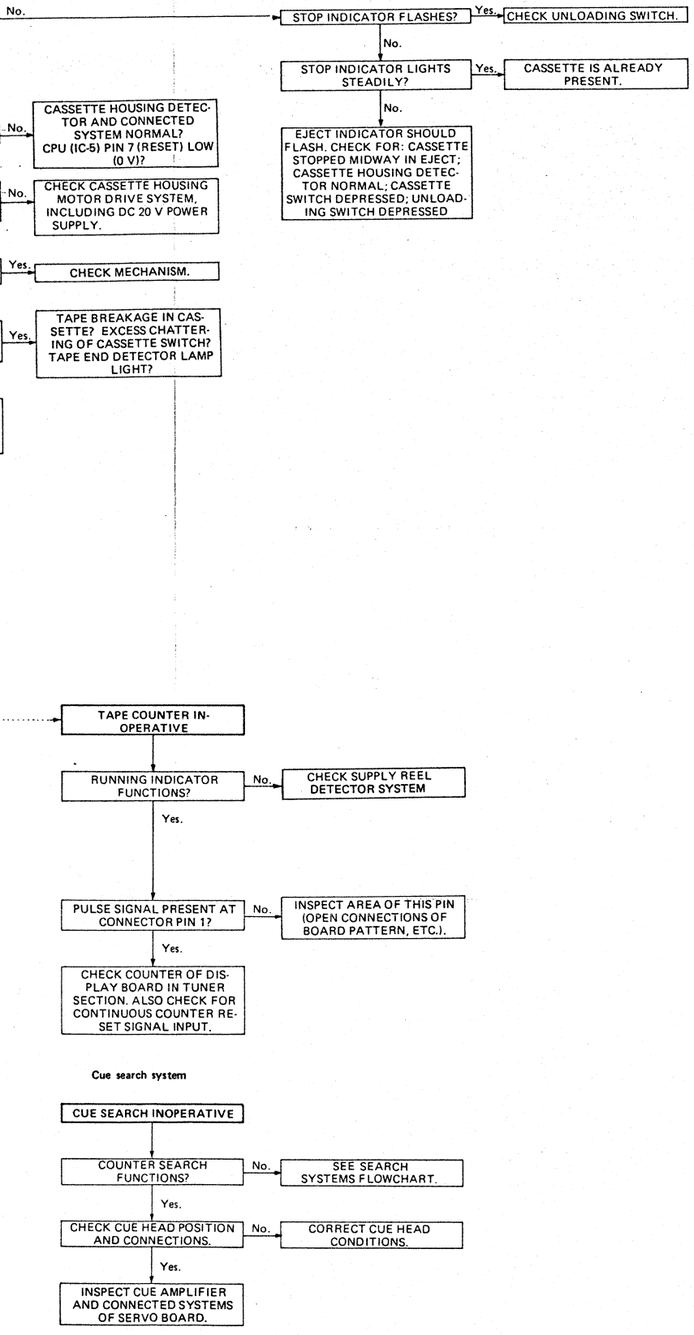
5. FF AND REWIND SYSTEMS



6. SEARCH SYSTEM



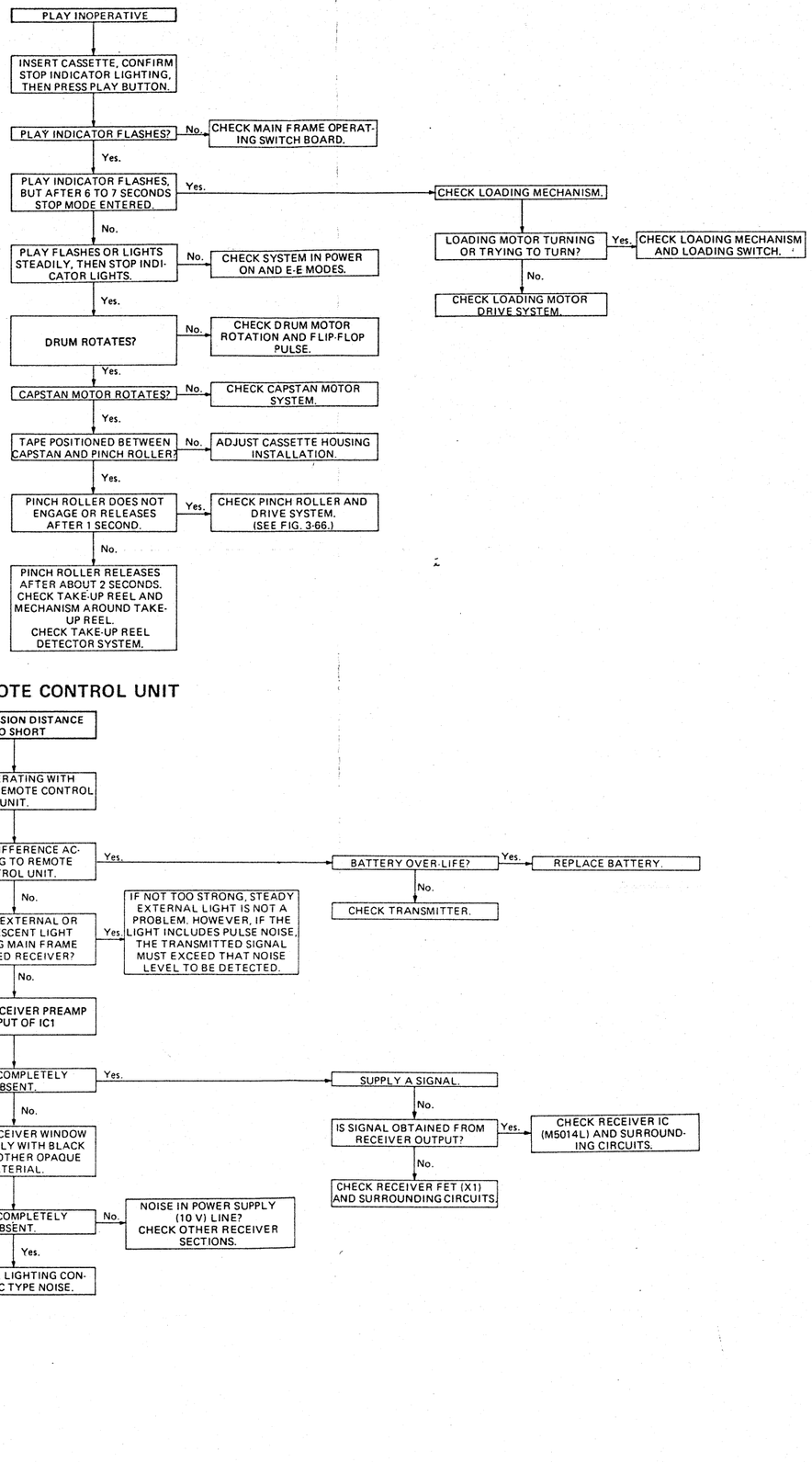
DING SYSTEM



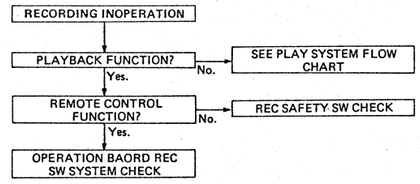
Cue search system

4. PLAY AND RECORDING SYSTEMS

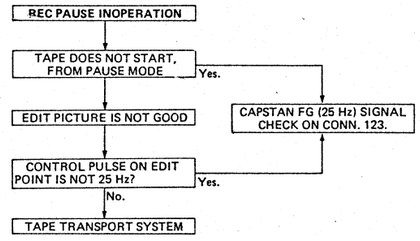
4.1 Play system



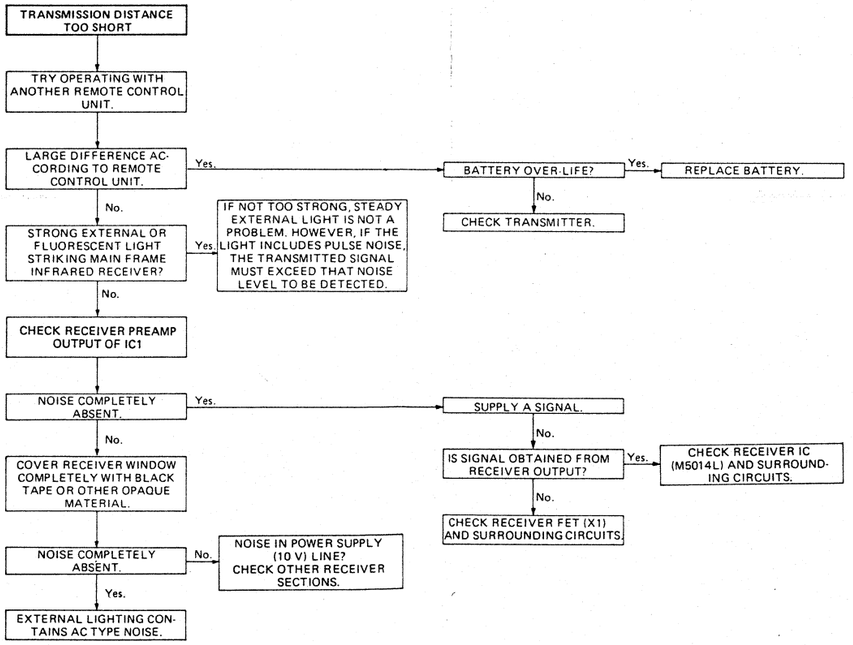
4.2 Recording system



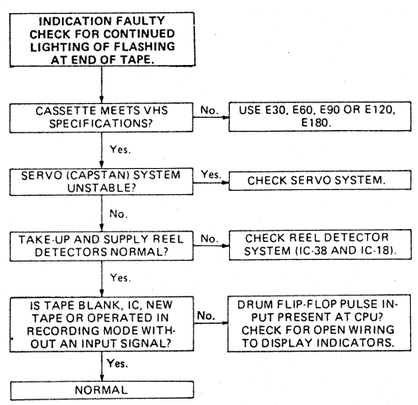
4.3 REC PAUSE system



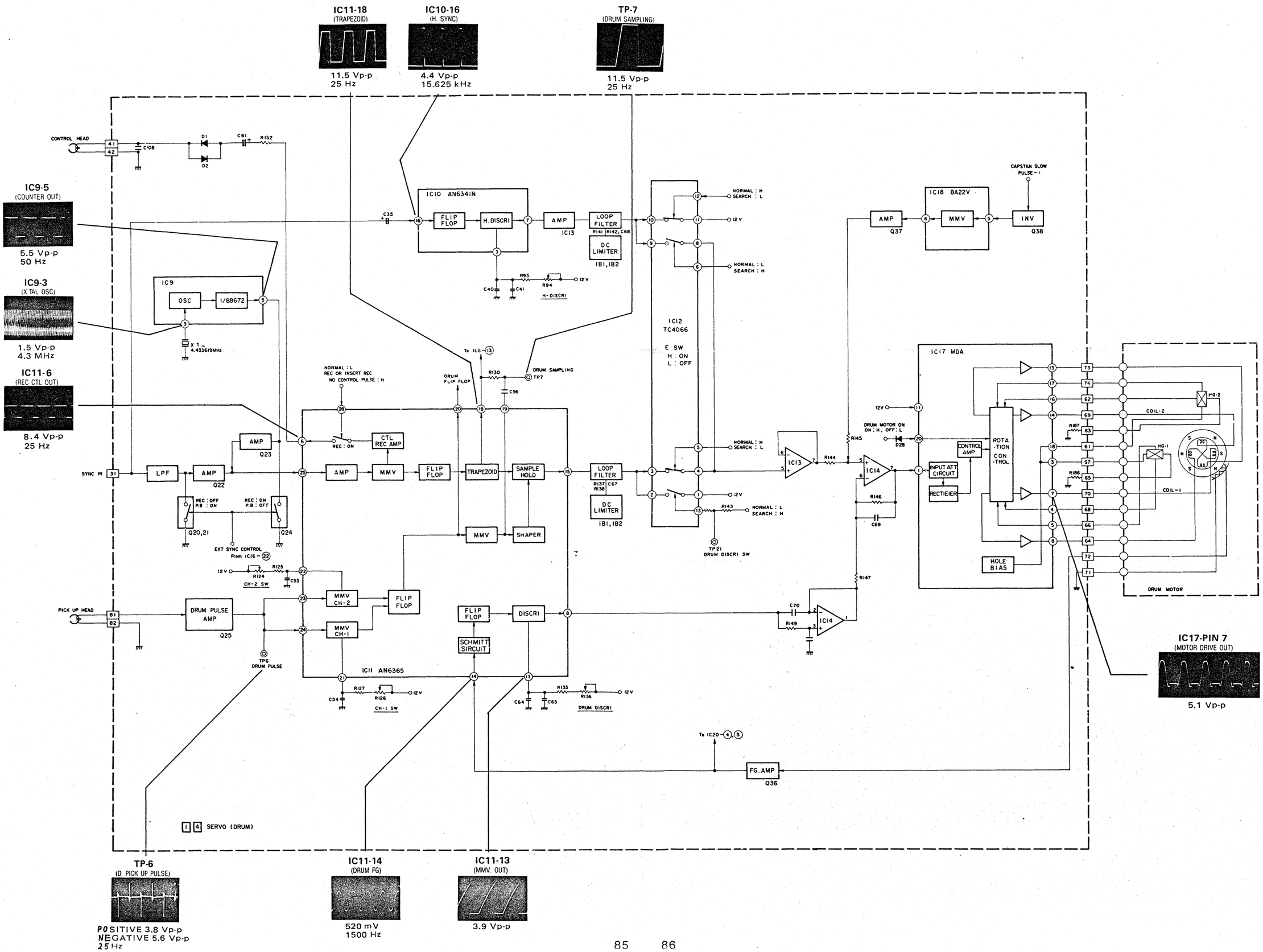
7. REMOTE CONTROL UNIT



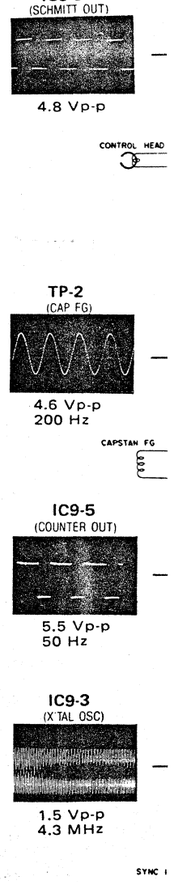
8. TAPE REMAINING INDICATOR (SERVO CPU)



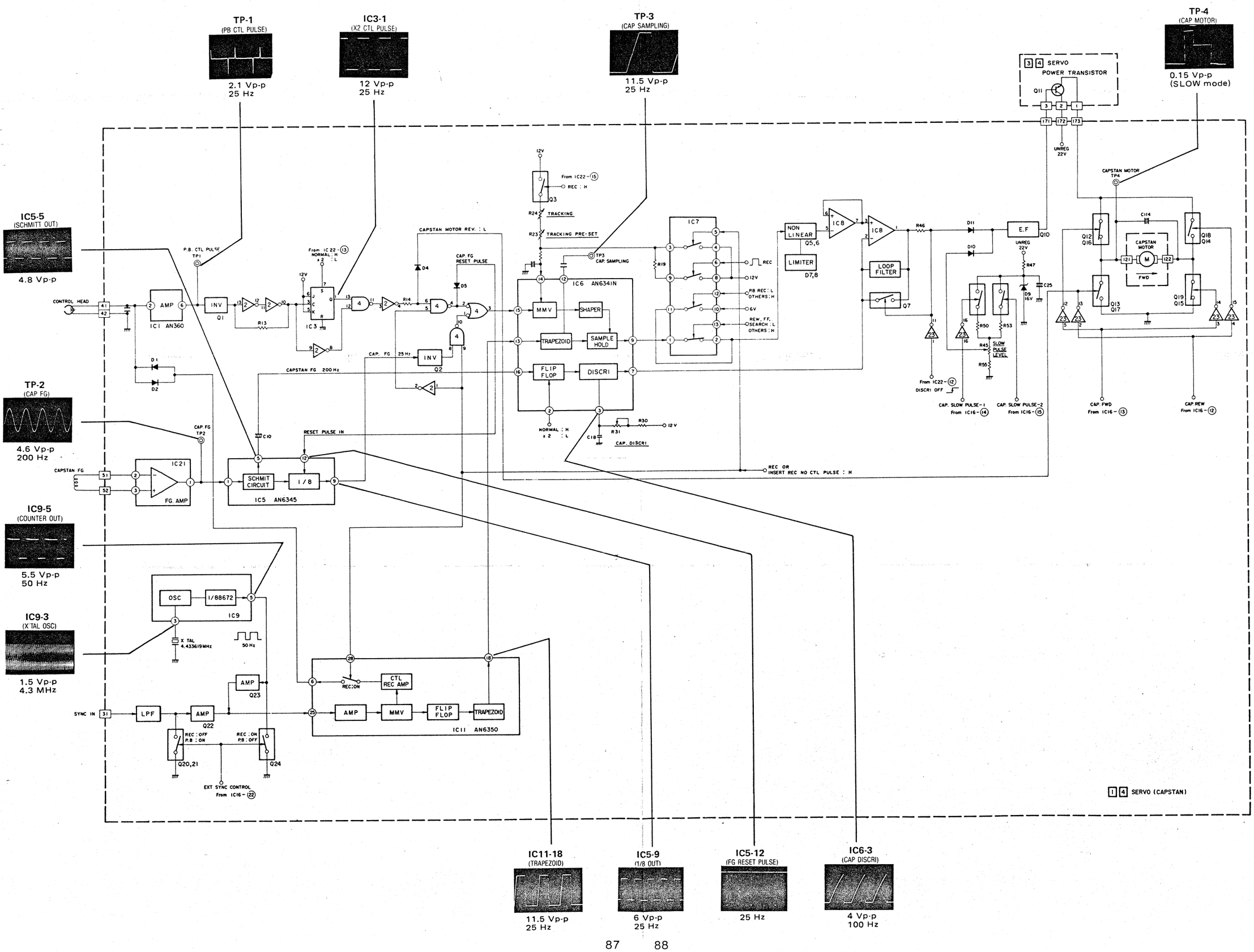
Kopftrommelservo – Blockdarstellung · Drum servo block diagram



Capstanse



Capstanservo – Blockdarstellung · Capstan servo block diagram



Blockschaltbild der Servoschaltungen · Servo block diagram

TP-1 (PB CTL PULSE) — 2.1 Vp-p, 25 Hz

TP-1 (REC CTL) — 7 Vp-p

IC5-12 (FG RESET PULSE) — 25 Hz

IC3-1 (X2 CTL PULSE) — 12 Vp-p, 25 Hz

IC9-3 (X'TAL OSC) — 1.5 Vp-p, 4.3 MHz

TP-3 (CAP SAMPLING) — 11.5 Vp-p, 25 Hz

IC6-3 (CAP DISCRI) — 4 Vp-p, 100 Hz

IC5-5 (SCHMITT OUT) — 4.8 Vp-p

TP-2 (CAP FG) — 4.6 Vp-p, 200 Hz

IC5-9 (1/8 OUT) — 6 Vp-p, 25 Hz

IC9-5 (COUNTER OUT) — 5.5 Vp-p, 50 Hz

IC11-18 (TRAPEZOID) — 11.5 Vp-p, 25 Hz

IC11-6 (REC CTL OUT) — 8.4 Vp-p, 25 Hz

TP-6 (D. PICK UP PULSE) — POSITIVE 3.8 Vp-p, NEGATIVE 5.6 Vp-p, 25 Hz

IC11-14 (DRUM FG) — 520 mV, 1500 Hz

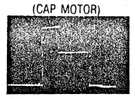
IC11-13 (MMV. OUT) — 3.9 Vp-p

TP-7 (DRUM SAMPLING) — 11.5 Vp-p, 25 Hz

IC10-16 (H. SYNC) — 4.4 Vp-p, 15.625 kHz

IC17-PIN 7 (MOTOR DRIVE OUT) — 5.1 Vp-p

TP-4
(CAP MOTOR)



0.15 Vp-p
(SLOW mode)

3 4 SERVO POWER TRANSISTOR Q11

CUE HEAD

CUE AMP Q39, IC19

CUE DET. IC19

Q40

SW2 SEARCH SW

SW3 INSERT SW

SW1 AUDIO DOLBY SW

1 8 AUDIO

HEAD PHANS JACK

MIC JACK

AUDIO OUT
NC
GND
DOLBY SW
MIC SW
MIC IN
GND

SLOW PULSE-1 20ms
SLOW PULSE-2 50ms
SLOW PULSE 70ms

CAPSTAN MOTOR TP4

E.F. Q10

UNREG 22V

R46 R47 C25 D9 16V

D10 D11

Q8 Q9

R50 R53 R54 SLOW PULSE LEVEL R55

CAP. SLOW PULSE-1

NORMAL REC/PB (L) DISCRI OFF (H)

From IC22-(12)

Q12 Q16 Q13 Q17 Q18 Q14 Q19 Q15

C114

CAPSTAN MOTOR

REV.:ON FWD:OFF BRAKE:ON STOP:OFF

REV.:OFF FWD:ON BRAKE:ON STOP:OFF

REC PAUSE

REC

To Q3-(8)

To IC7-(6)

D18 D19

REC START

FM NOISE

From IC11-(20)

D27

To IC23-(1)

To IC7-(12)

To IC7-(13)

D16 D17

TP22

NO CTL PULSE IN INSERT REC

SLOW PEED

SLOW TRIGER PULSE

BUFFER Q33

ON OFF ON OFF

F0 CAP. DISCRI SERVO
F1 INSERT NO CTL PULSE
F2 FRAM ADV. TRIGGER
F3 RUNNING INDICATOR

FWD REV. BRAKE OFF
FWD REV BRAKE OFF

E0 CAP. REV.
E1 CAP. FWD

SLOW STILL 20ms
SLOW STILL 50ms

E2 CAP. SLOW PULSE-1
E3 CAP. SLOW PULSE-2

H0 SQELCH
H1 SEARCH
H2 SEARCH REW
H3 NO CTL PULSE

S-REW/S-FF
S-REW

NO CTL PULSE
PLAY, X2, S-REW, S-FF
STILL, SLOW, F-ADV

REC
To Q21, Q24-(8)

G0 EXT SYNC
G1 TAPE END ALARM
G3 V. PULSE CTL

BUFFER Q34

OFF ON
MORE THAN 10min 10min 5min

6 INT

SPEED
To IC3-(7)
To IC6-(2)

From Q40
From SEARCH SW
To IC16-(7) RESET IN
To IC16-(58) S REEL FG
To IC16-(57) TU REEL FG
From INSERT SW
To IC17-(23)
To IC16-(39)
To IC16-(55)
From Q34-(C)

CUE SEARCH CUE SIGNAL
COUNTER POSITION
POWER ON RESET PULSE
REEL FG PLAY 5~13Hz
REEL FG PLAY 5~13Hz
INSERT SW ON
DRUM MOTOR ON
AL SW ON
SPEED MODE
TAPE END

From DOLBY SW
From Q33-(C)
To IC16-(40)
To IC16-(4)
To IC16-(3)
To IC16-(2)
To IC16-(8)
To IC16-(9)
To IC16-(6)
To IC16-(5)

DOLBY ON
RUNNING INDICATOR OUT ON OFF ON OFF
REC MODE
INSERT REC MODE
SLOW
STILL
SEARCH REW
SEARCH FF
CAPSTAN MOTOR ON
FRAME ADVANCE SW ON ON OFF
REC START
DRUM FLIP FLOP CH-2 CH-1
CAPSTAN FG OUT
SEARCH MOTOR CONTROL OUT
10V
12V
POWER ON CONTROL OFF ON
UNREG 22V
GND
GND

From IC11-(20)
From IC20-(14)
From IC21

TP23

AUDIO DOLBY IND
RUNNING IND
REC
INSERT REC
SLOW
STILL
SEARCH REW
SEARCH FF
CAPSTAN M. ON
FRAME ADV
REC START
DRUM F. FLOP
CAPSTAN FG
SEARCH M. CTL
10V
12V
POWER ON CONTROL
UNREG 22V
GND
GND

1 2 MECHACOM

POWER ON/OFF CONTROL
UNREG 22V
12V
DRUM 12V
GND

1 0 REGULATOR

To IC17-(11)

FM NOISE
D. FLIP FLOP
X2
DRUM FG
TU REEL FG
SP REEL FG
AL SW
REC

1500Hz
5~13Hz
5~13Hz
AFTER LOADING

STILL
SLOW
INSERT REC
FRAM ADVANCE

ON OFF ON

SEARCH REW
SEARCH FF
RE SET

POWER ON RESET PULSE IN
0.5sec

IC16 UPD553C-177

CLOCK 400KHz
CL 0
CL 1

Vdd Vss

20ms
SLOW PULSE 1

Q32 SEARCH REW OFF

CH1 V. PULSE

R160

IC15 DN850

MMV MMV MMV MMV

INV. Q30

DRUM FLIP FLOP OUT 34

V. PULSE OUT 35

CH2 V. PULSE

R164 D23 D22

Q31 SEARCH REW OFF

DRUM FF
ONLY S-REW 200μs
CH-1 CH-2 CH-1
100μs 200μs
V. PULSE

FM NOISE

TP 24

FM DETECT SIGNAL 36

Q35

IC 20

FM NOISE DET.

SLOW SPEED MMV

DRUM FG SCHMITT

CAP. FG SCHMITT

DRUM FG 1500Hz

CAP. FG 25Hz

SPEED VR

To IC17-(20)

To IC12-(6)(13) D24 D25

SEARCH

To IC 4-(3)(12)
Q28-(8)
SEARCH

25Hz
10Vp-p
CONTROL PULSE

SLOW TRIGER PULSE
DRUM FG 1500Hz
CAP. FG 25Hz

D28
DRUM MOTOR ON 7
ON:H STOP:L

IC17 MDA

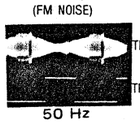
MOTOR DRIVE AMP

67 61 63 69 62 74 73

HG-1 HG-2 (Hall element)

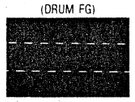
COIL-2

TP-24
(FM NOISE)



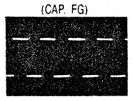
TP206 FM OUT
TP24 FM NOISE
50 Hz

IC20-PIN 2
(DRUM FG)



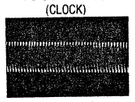
1500 Hz

IC20-PIN 14
(CAP. FG)



25 Hz
9.2 Vp-p

IC16-PIN 1
(CLOCK)

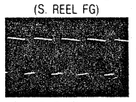


8.4 Vp-p
400 kHz

IC16-PIN 37
(TU. REEL FG)

8.6 Vp-p

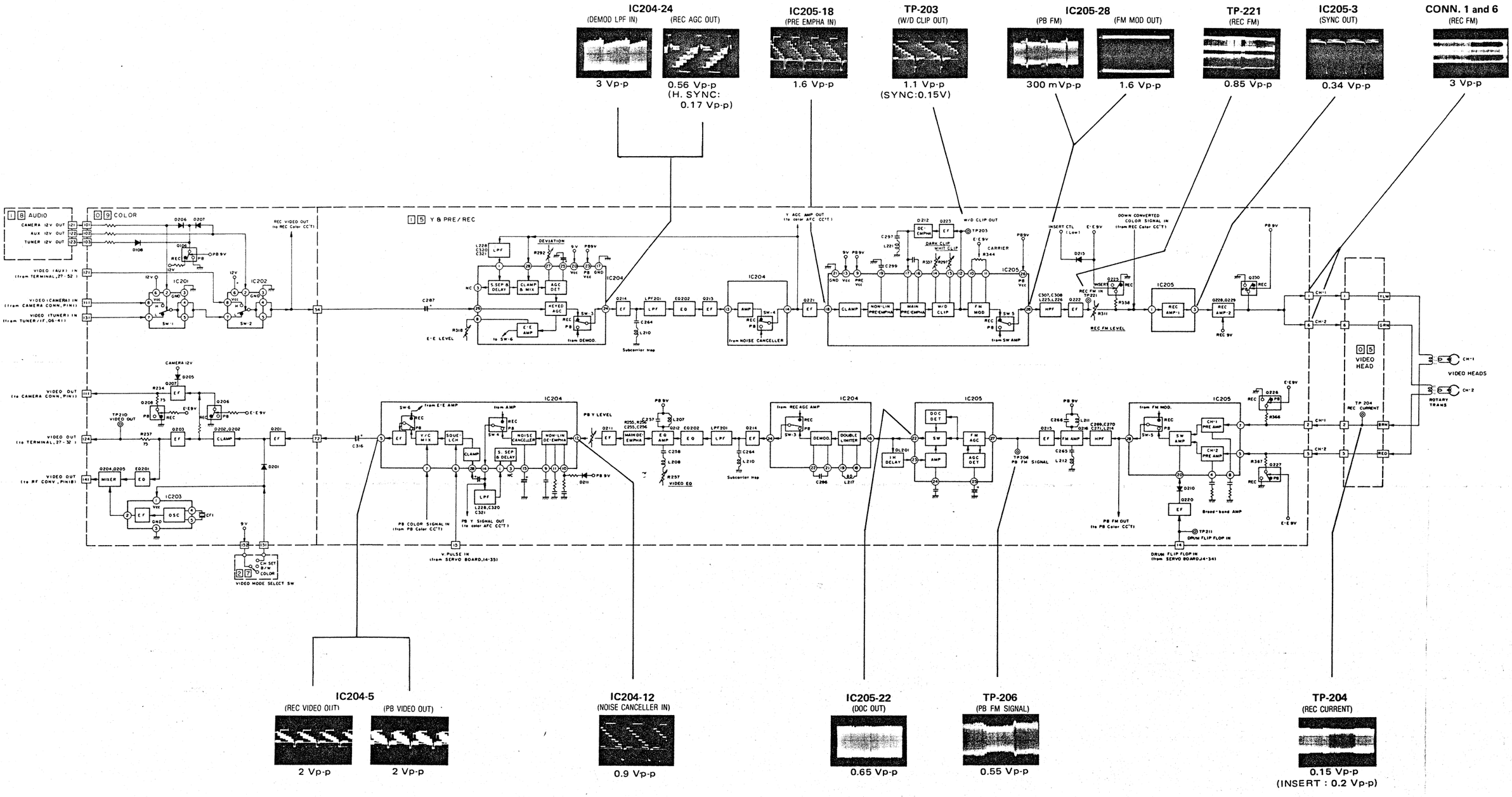
IC16-PIN38
(S. REEL FG)



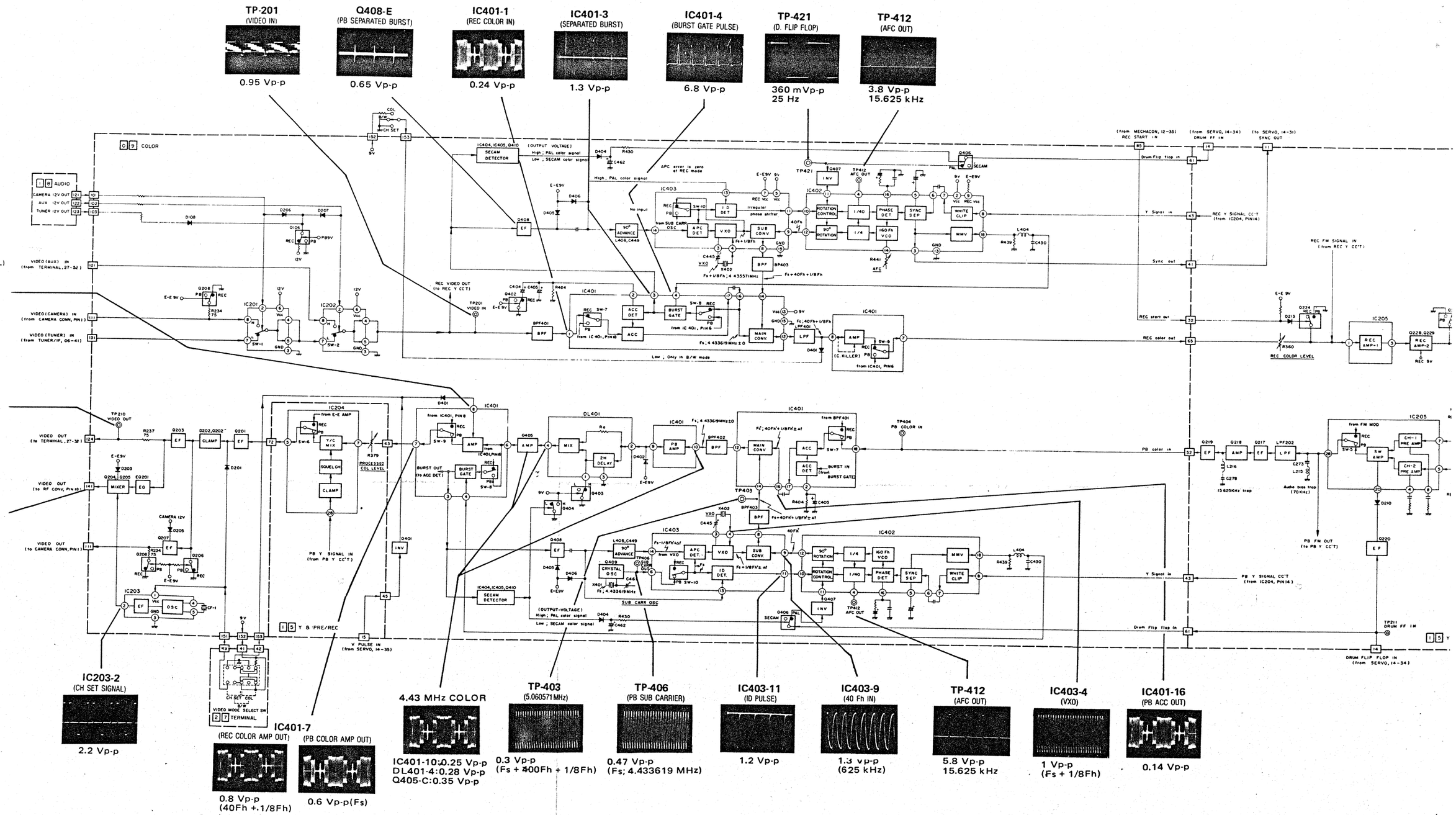
8.6 Vp-p

91 92

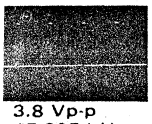
Luminanzsignal – Blockdarstellung · Luminance signal block diagram



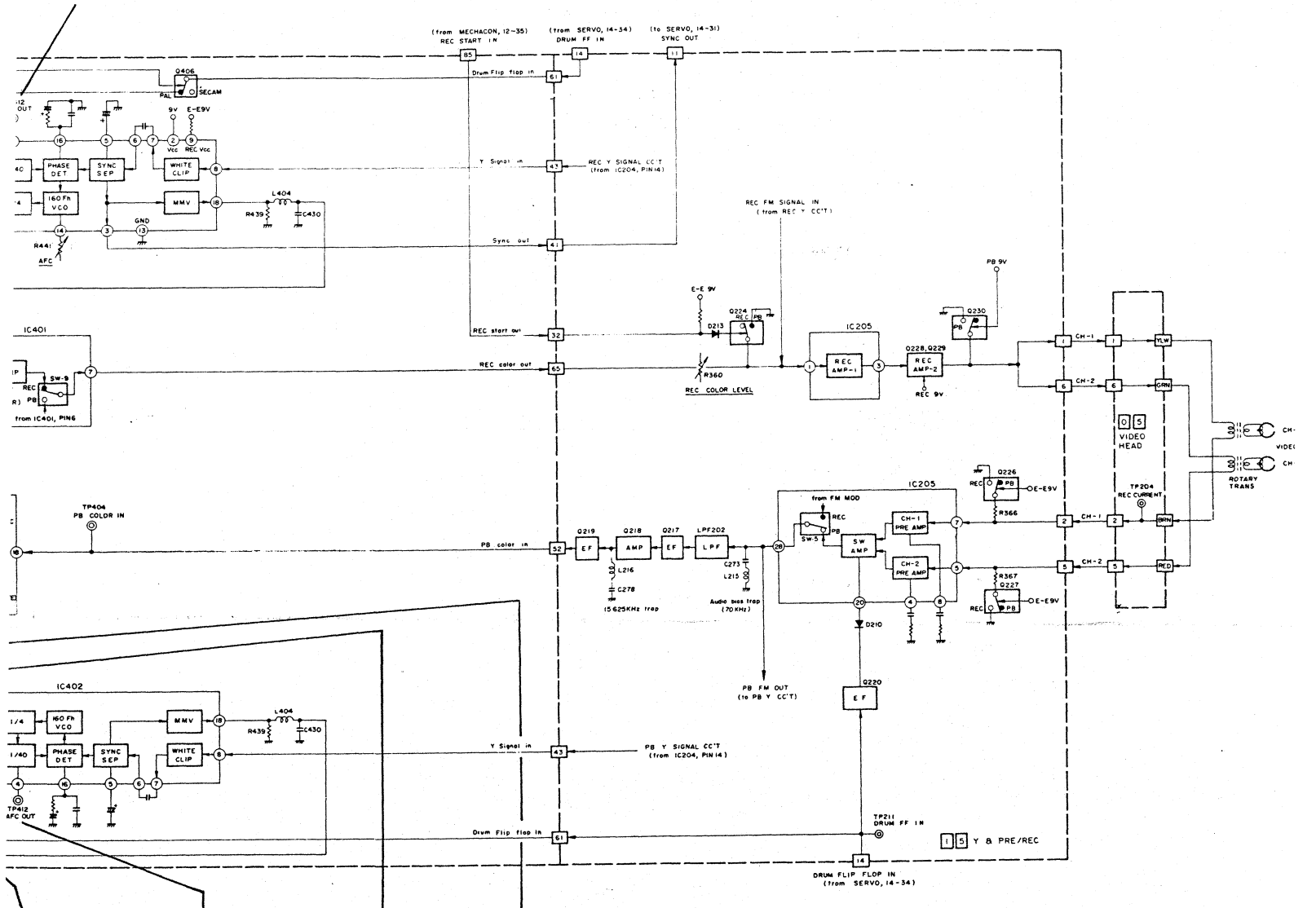
Farbsignal – Blockdarstellung · Color signal block diagram



TP-412
(AFC OUT)



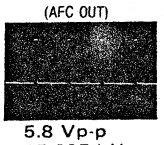
3.8 Vp-p
15.625 kHz



C403-9
(40 Fh IN)

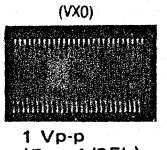
.3 Vp-p
625 kHz)

TP-412
(AFC OUT)



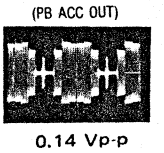
5.8 Vp-p
15.625 kHz

IC403-4
(VXO)



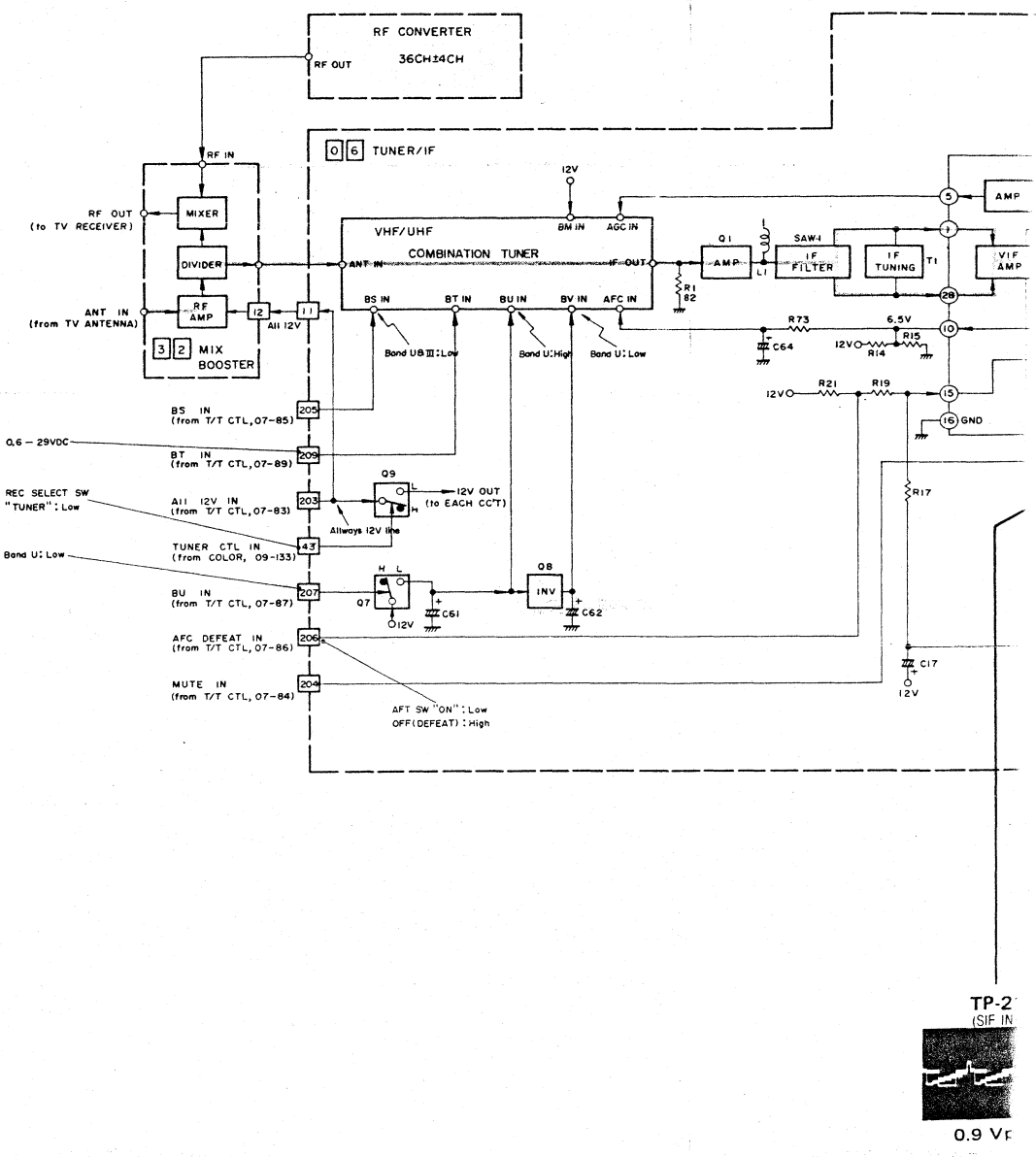
1 Vp-p
(Fs + 1/8Fh)

IC401-16
(PB ACC OUT)



0.14 Vp-p

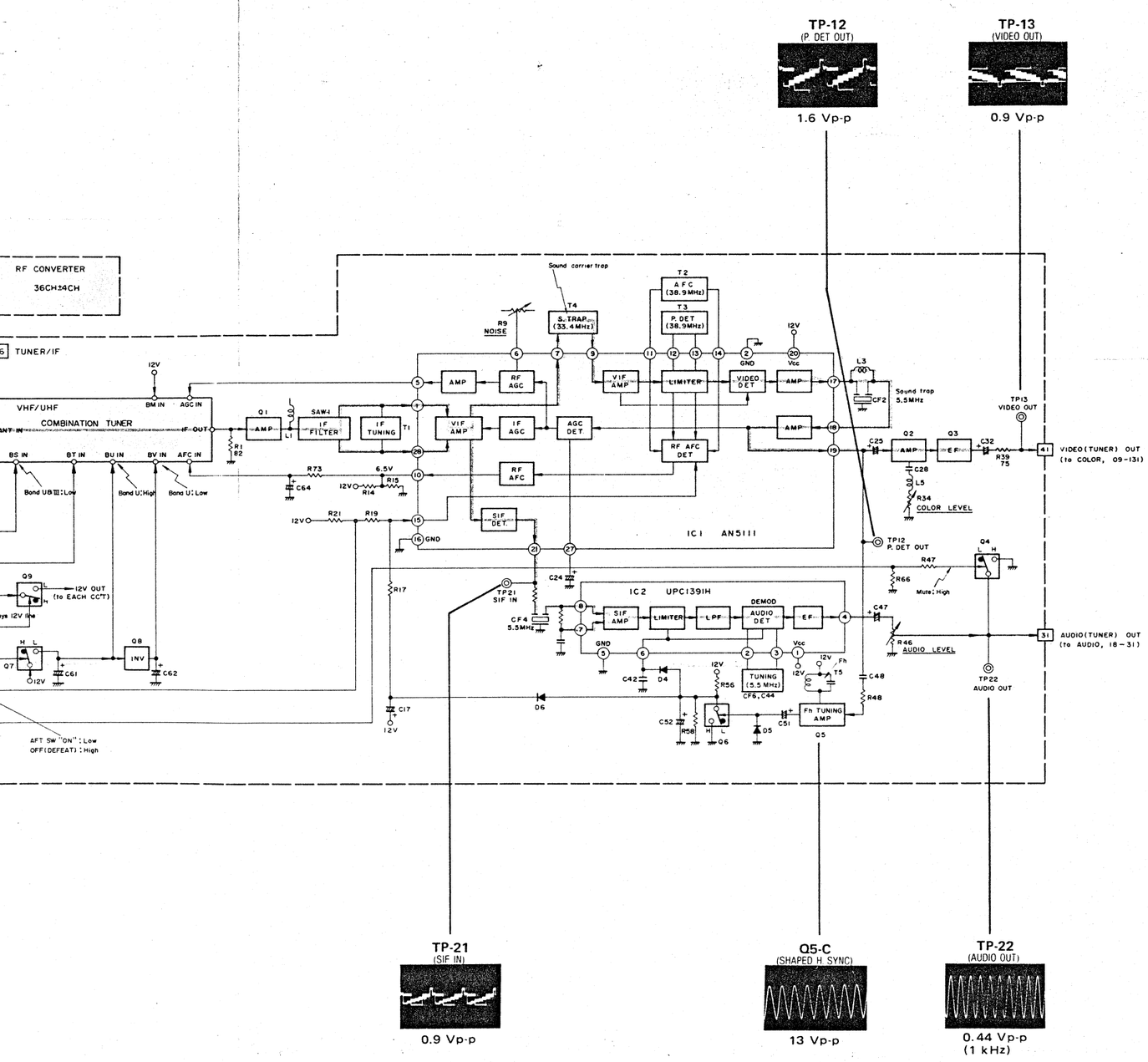
Tuner/ZF – Blockdarstellung · Tuner/IF block diagr



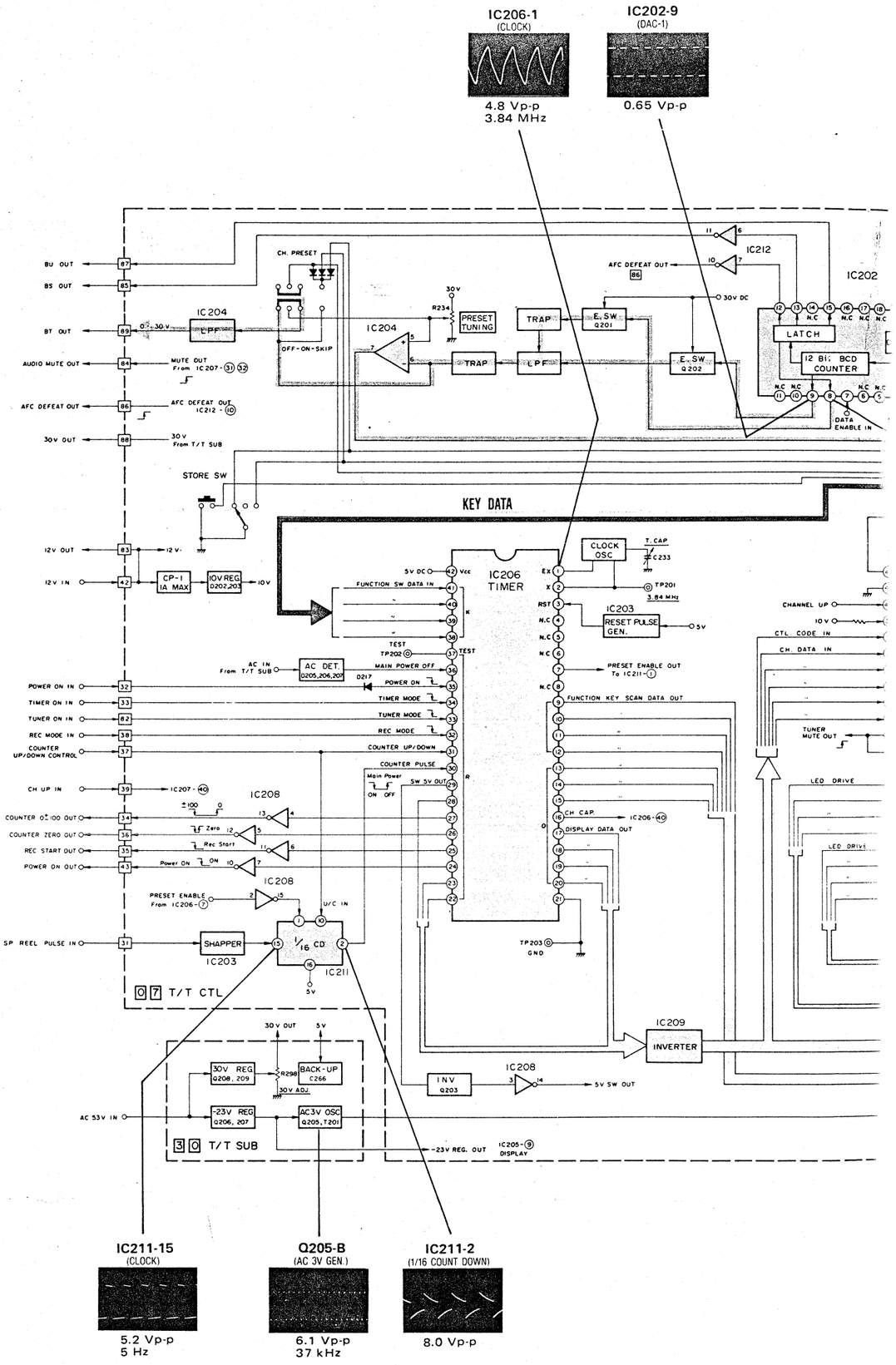
TP-2
(SIF IN

0.9 Vp

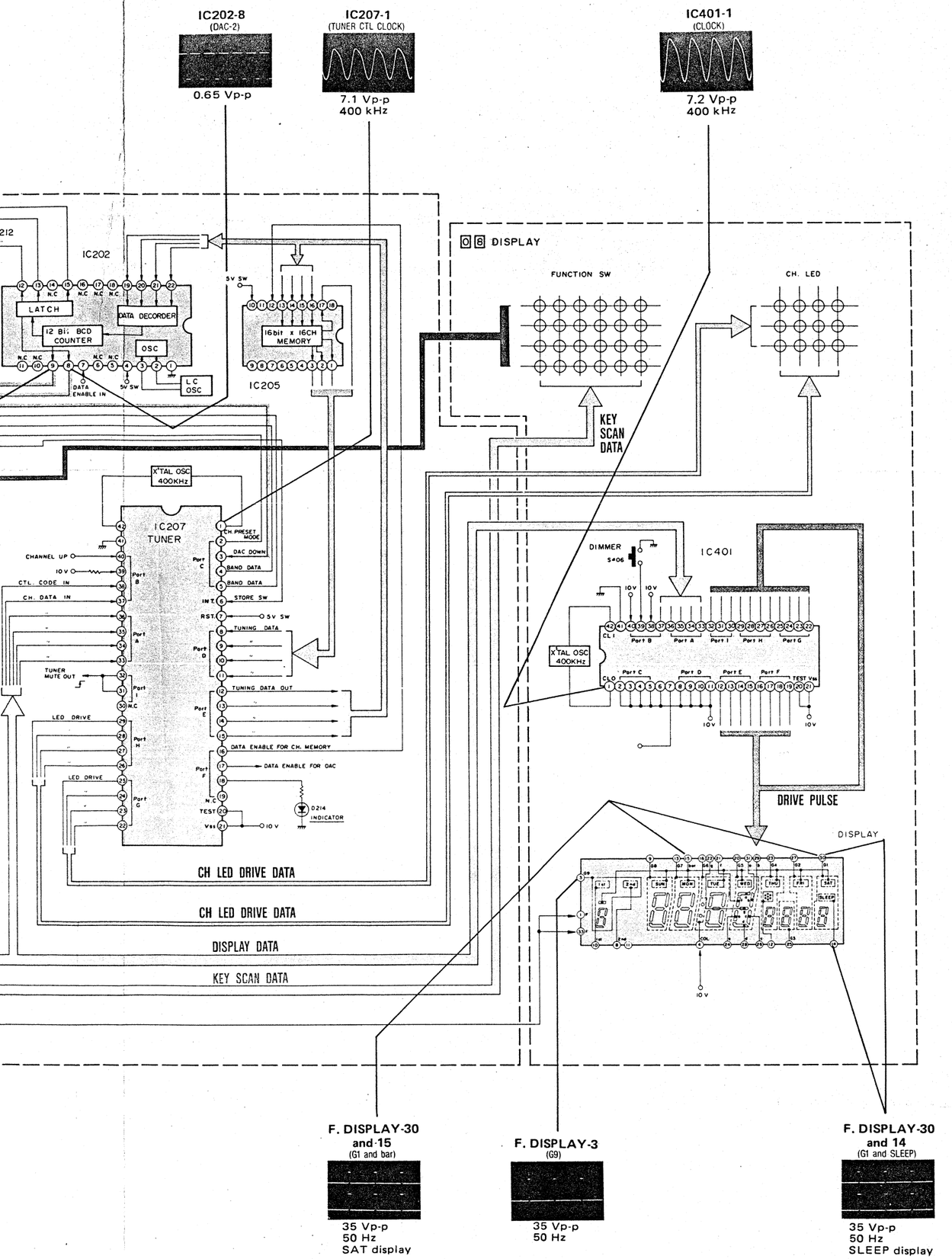
Blockdarstellung · Tuner/IF block diagram



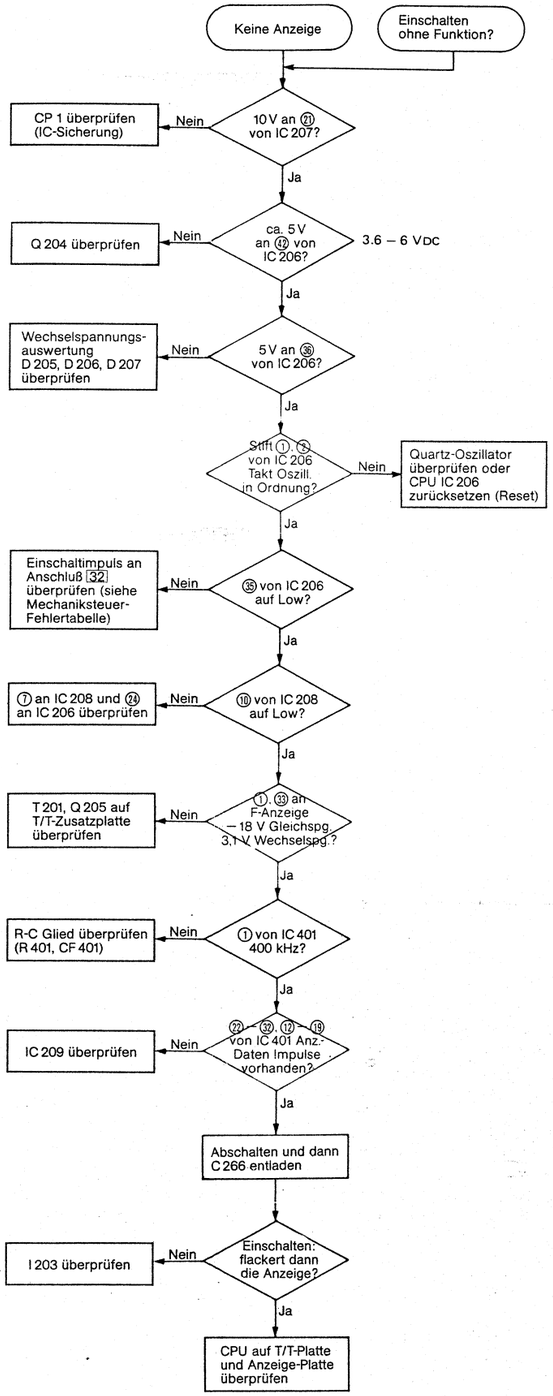
Tuner/Timer Steuerungssystem – Blockdarstellung · Tuner/Timer contr

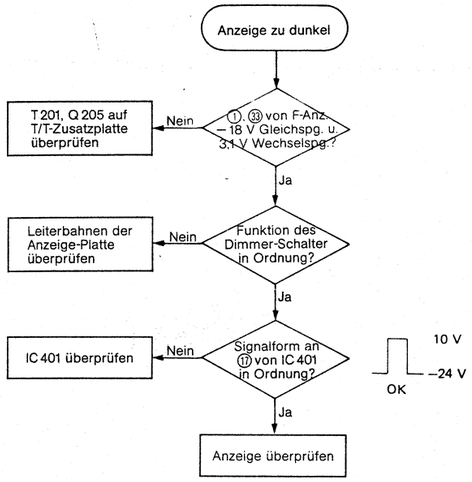


imer control block diagram



Fehlersuchtabelle der Tuner/Timer-Steuerung





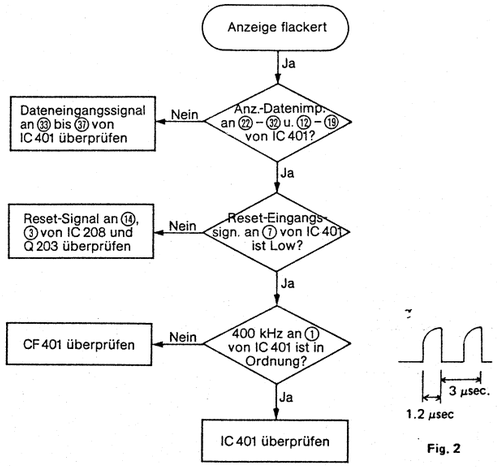
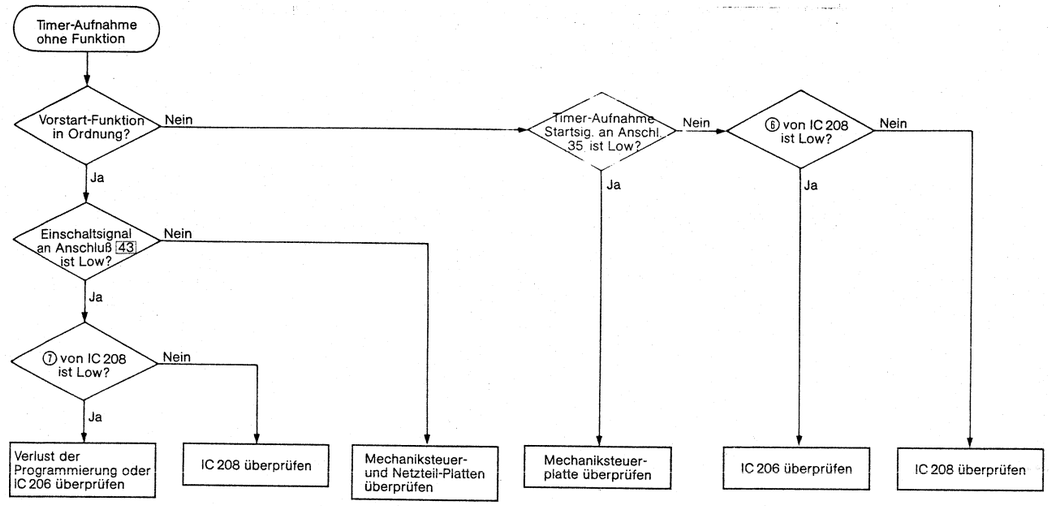
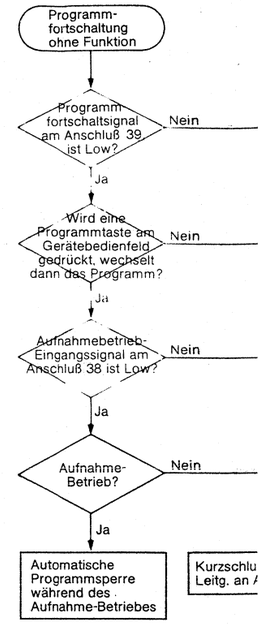
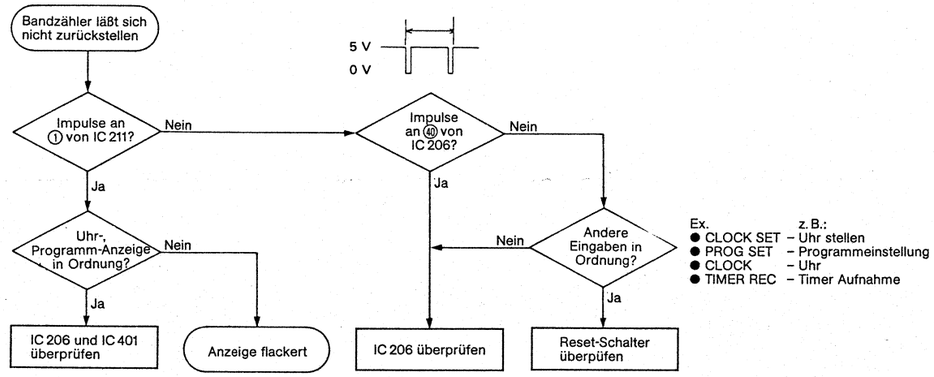


Fig. 2







amm-
haltung
Funktion

gramm-
haltsignal
schluß 39
Low?
Nein
Ja

Mechaniksteuerplatte überprüfen Kurzschl. zwisch. Anschlüssen 38 und 39

Hinweise:
IC 207 ㊴, ㊵: 10 V
IC 207 ㊵ hat weniger als 1 V, wenn Programmfortschalttaste betätigt wird.

rd eine
mmtaste am
bedienfeld
kt, wechselt
Programm?
Nein
Ja

nebetrieb-
ssignal am
38 ist Low?
Nein
Ja

ahme-
rieb?
Nein
Ja

sche
nsperre
des
e-Betriebes

Kurzschluß in der Leitg. an Anschluß 38

IC 206 überprüfen

Kurzschluß zwischen R 259 und R 261?
Nein
Ja

Kurzschluß entfernen

IC 207 überprüfen

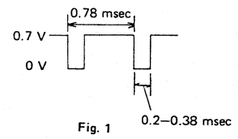


Fig. 1

Kanal-Voreinsteller LED blinkt nicht

Keine Anzeige
Nein
Programmanzeige leuchtet?
Ja

Q 203 überprüfen
Nein
An ④ von IC 202 5 V?
Ja

L 201, R 217, C 212, C 213, C 214 überprüfen
Nein
Oszillator an ② von IC 202 in Ordnung?
Ja

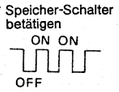
Q 208, Q 209 auf T/T-Zusatzplatte überprüfen
Nein
An ⑧ von IC 204 30 V?
Ja

RA 201, IC 207 überprüfen
Nein
Signalform an ⑲ bis ㉒, ① von IC 202 in Ordnung?
Ja

LED D 214 überprüfen
ja
Impulse an ⑱ von IC 207?
Nein

IC 207 überprüfen

* Speicher-Schalter betätigen

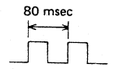


Hinweis:
Wenn an ⑧ von IC 202 Signalform wie in Fig. 1.

Speichert nicht ein

Nein
Rechteckspannung an ⑦ von IC 204?
Ja

LPF, BPF überprüfen
Nein
Welligkeit der Spannung an ⑤ von IC 204 kleiner als 40 mV?
Ja



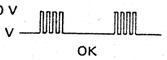
Im Kanalwahlbetrieb schalten und Voreinsteller-Schalter „an"

Speicherschalter und ⑱ von IC 207 überprüfen
Nein
Voreinsteller-LED blinkt?
Ja

IC 208, Q 203 überprüfen
Nein
An ⑩ von IC 205 Low?
Ja

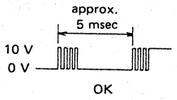
Q 206, Q 207 überprüfen
Nein
An ⑨ von IC 205 — 23 V?
Ja

IC 205 überprüfen
Nein
An ①, ②, ③, ⑰ Signal in Ordnung?
Ja



10 V Versorgungsspg. überprüfen
Nein
An ④ von IC 205 10 V und ⑯ von IC 205 10 V?
Ja

⑫ bis ⑮ von IC 207 überprüfen
Nein
An ⑬ bis ⑯ von IC 205 Signal in Ordg.
Ja



R 239, R 238 überprüfen
Nein
An ⑦ von IC 205 $V_{BT} = 4 \pm 0{,}3$ V?
Ja

IC 205, IC 202, IC 207 überprüfen

Bandzähler zählt nicht

Taktimpulse an ⑮ von IC 211 in Ordnung?
Nein
Impulse an ③ von IC 203 in Ordnung?
Nein
Ja

H > 1.25 V
L < 1.15 V

IC 203 überprüfen

Ja
Impulse an ② von IC 211 in Ordnung?
Nein

H > 4.5 V
L < 1.0 V

Ja
An ① von IC 211 High?
Nein
Impulse an ① von IC 211?
Nein
Ja

Ja
An ② von IC 208 Low?
Nein
Ja

IC 206 überprüfen

IC 208 oder IC 211 überprüfen

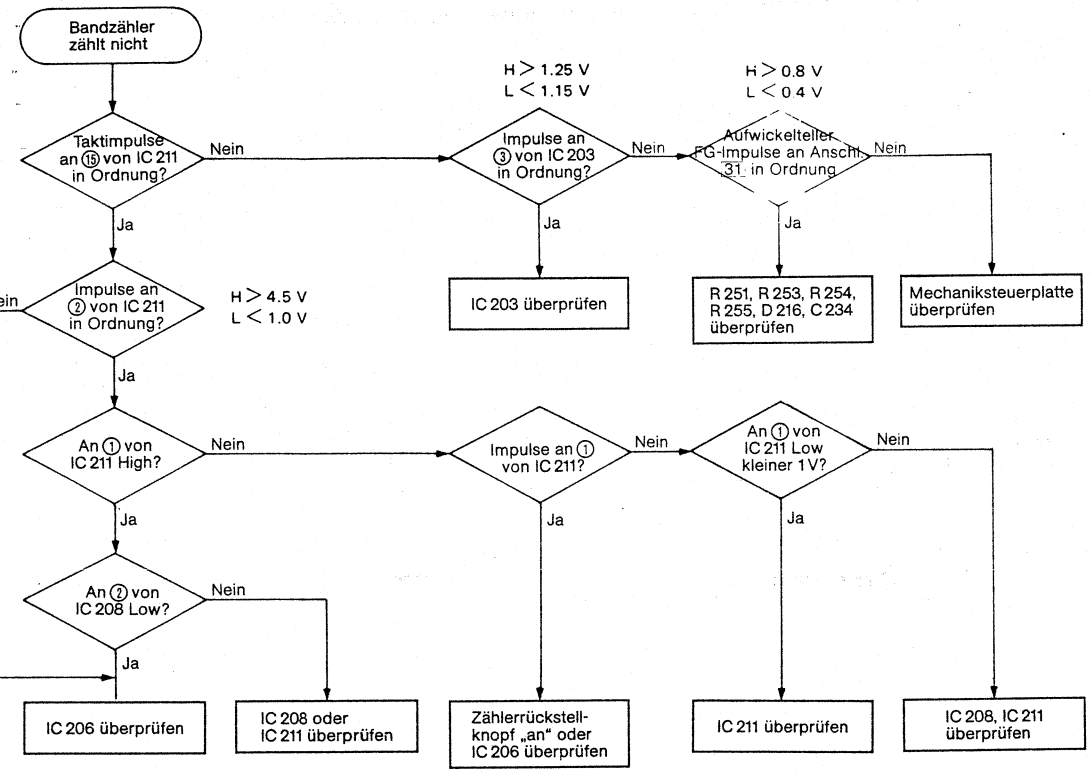
Zählerrückstellknopf „an" oder IC 206 überprüfen

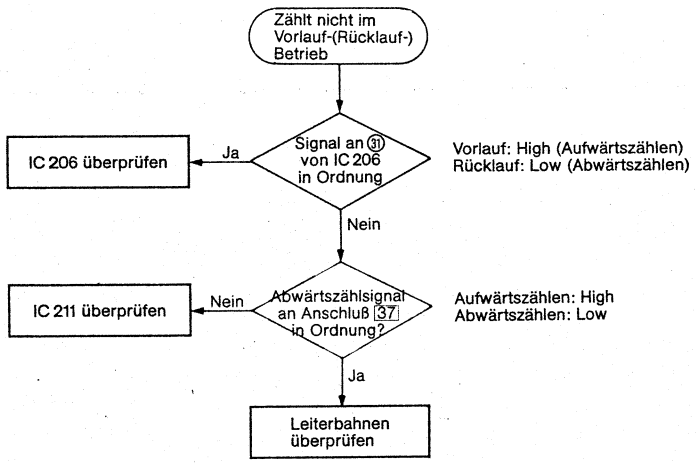
Zählt nicht im Vorlauf-(Rücklauf-Betrieb

Signal an ㉛ von IC 206 in Ordnung
Ja
IC 206 überprüfen

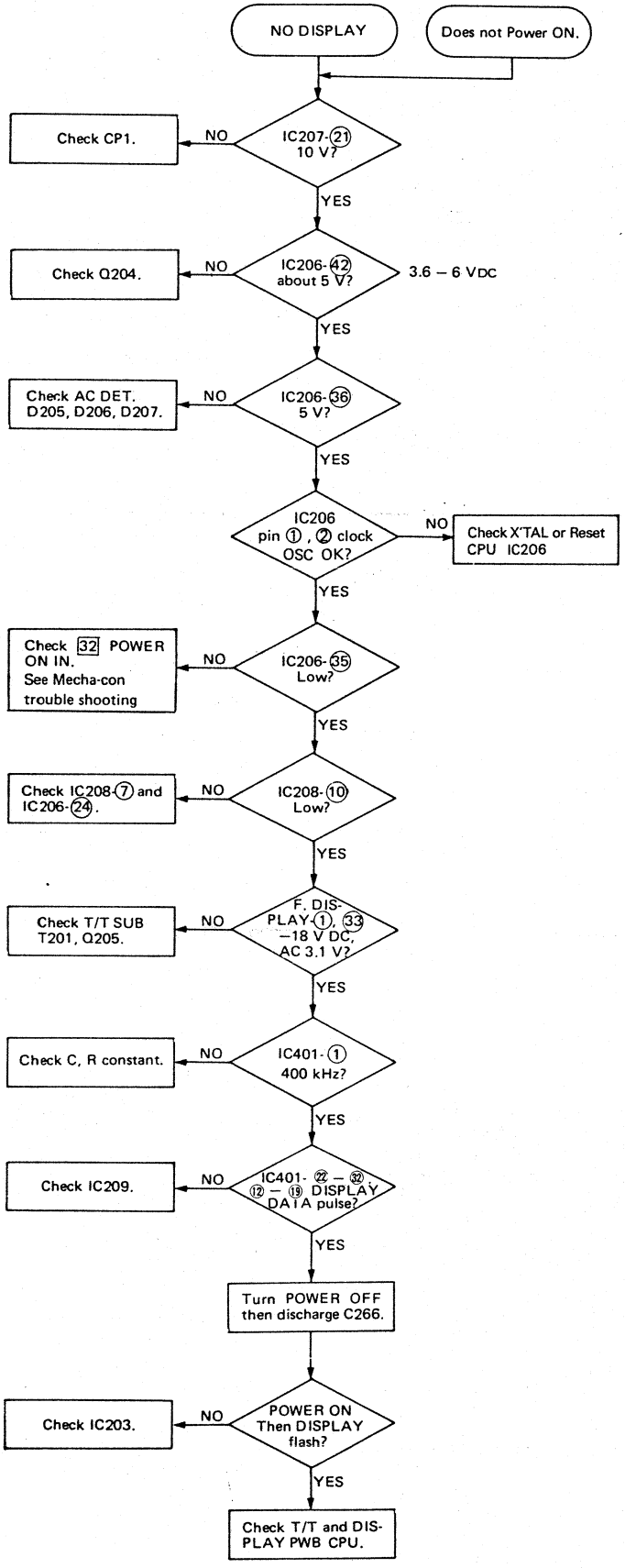
Nein
Abwärtszählsignal an Anschluß 37 in Ordnung?
Nein
IC 211 überprüfen

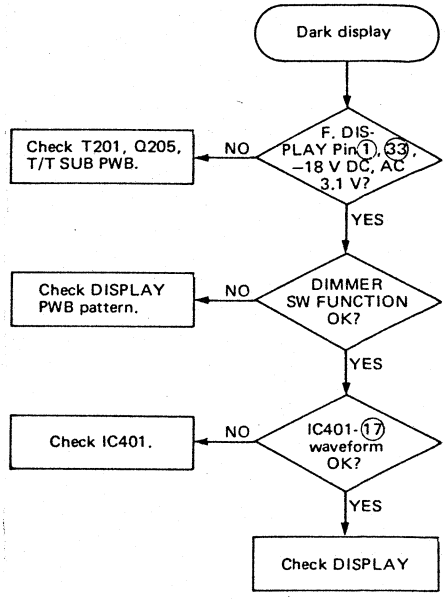
Ja
Leiterbahnen überprüfen

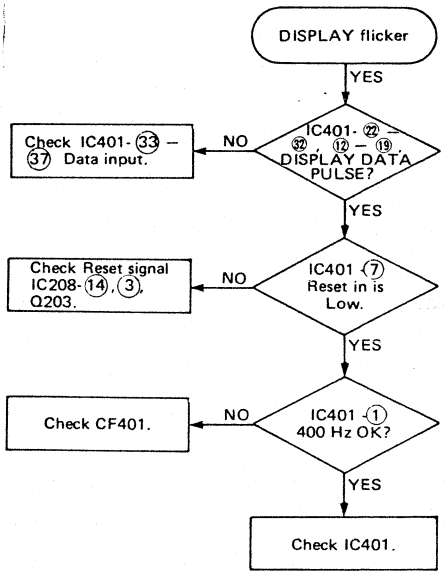

Bandzähler zählt nicht
Taktimpulse an ⑮ von IC 211 in Ordnung?
Nein
H > 1.25 V
L < 1.15 V
Impulse an ③ von IC 203 in Ordnung?
Nein
H > 0.8 V
L < 0.4 V
Aufwickelteller FG-Impulse an Anschl. 31 in Ordnung
Nein
Ja
Impulse an ② von IC 211 in Ordnung?
H > 4.5 V
L < 1.0 V
IC 203 überprüfen
R 251, R 253, R 254, R 255, D 216, C 234 überprüfen
Mechaniksteuerplatte überprüfen
An ① von IC 211 High?
Impulse an ① von IC 211?
An ① von IC 211 Low kleiner 1 V?
An ② von IC 208 Low?
IC 206 überprüfen
IC 208 oder IC 211 überprüfen
Zählerrückstell-knopf „an" oder IC 206 überprüfen
IC 211 überprüfen
IC 208, IC 211 überprüfen

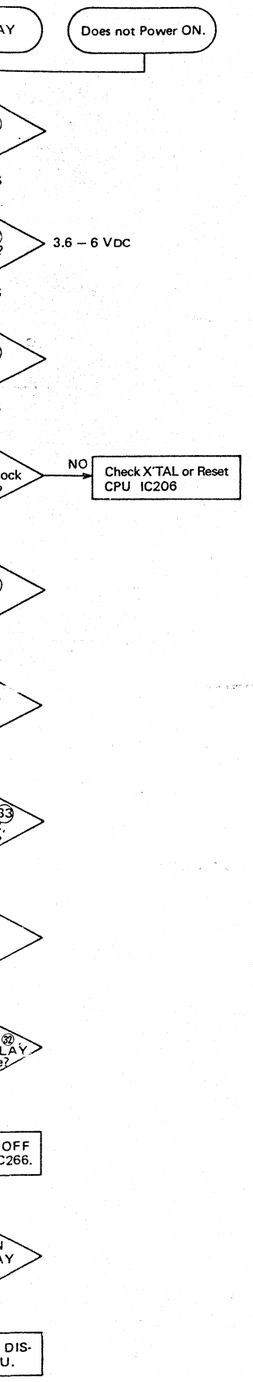

Zählt nicht im Vorlauf-(Rücklauf-) Betrieb
Signal an ㉛ von IC 206 in Ordnung
Ja
IC 206 überprüfen
Vorlauf: High (Aufwärtszählen)
Rücklauf: Low (Abwärtszählen)
Nein
Abwärtszählsignal an Anschluß 37 in Ordnung?
Nein
IC 211 überprüfen
Aufwärtszählen: High
Abwärtszählen: Low
Ja
Leiterbahnen überprüfen

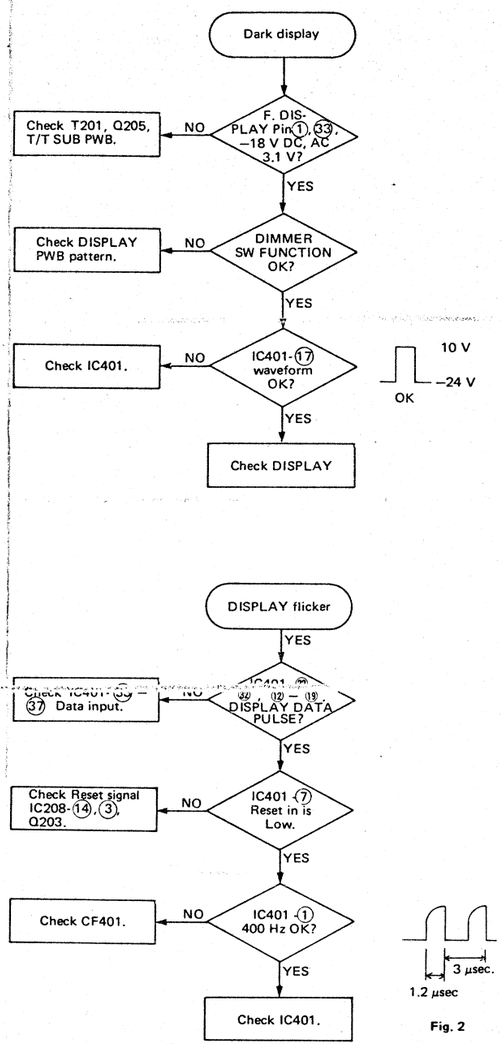
Tuner/Timer troubleshooting guide







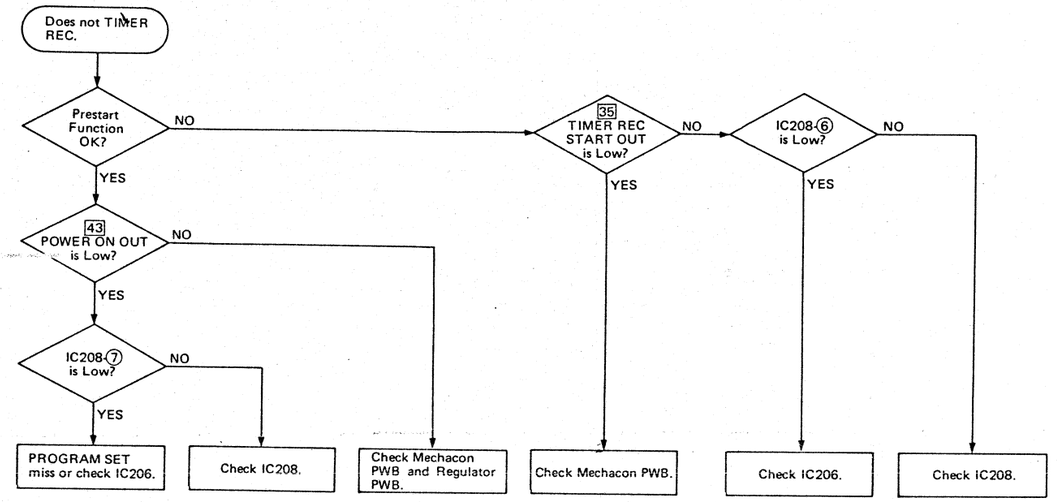

AY
Does not Power ON.
3.6 – 6 VDC
ock
NO
Check X'TAL or Reset CPU IC206
OFF C266.
DIS-U.

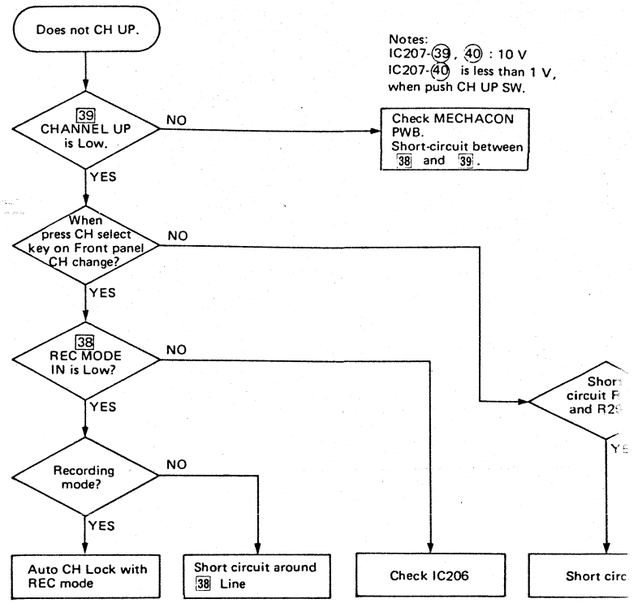

Dark display
F. DIS-PLAY Pin (1), (33), –18 V DC, AC 3.1 V?
NO
Check T201, Q205, T/T SUB PWB.
YES
DIMMER SW FUNCTION OK?
NO
Check DISPLAY PWB pattern.
YES
IC401-(17) waveform OK?
NO
Check IC401.
10 V
–24 V
OK
YES
Check DISPLAY

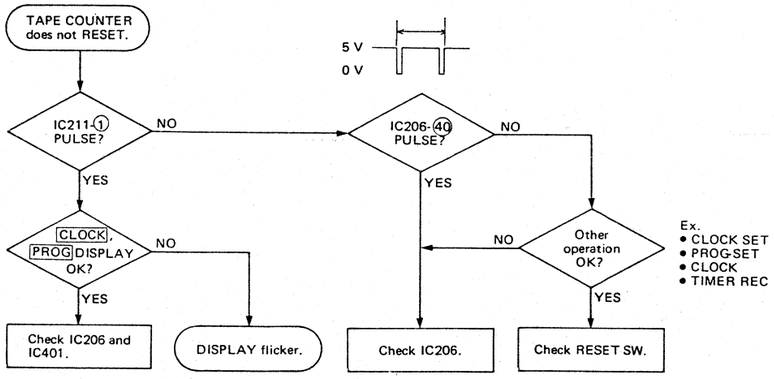
DISPLAY flicker
YES
IC401 (12) – (19) DISPLAY DATA PULSE?
NO
Check IC401-(37) Data input.
YES
IC401-(7) Reset in is Low.
NO
Check Reset signal IC208-(14), (3), Q203.
YES
IC401-(1) 400 Hz OK?
NO
Check CF401.
YES
Check IC401.

3 μsec.
1.2 μsec

Fig. 2


Does not TIMER REC.
Prestart Function OK?
NO
YES
43 POWER ON OUT is Low?
NO
YES
IC208-(7) is Low?
NO
YES
PROGRAM SET miss or check IC206.
Check IC208.
Check Mechacon PWB and Regulator PWB.
35 TIMER REC START OUT is Low?
NO
YES
Check Mechacon PWB.
IC208-(6) is Low?
NO
YES
Check IC206.
Check IC208.


Does not CH UP.
Notes:
IC207-(39), (40) : 10 V
IC207-(40) is less than 1 V, when push CH UP SW.
39 CHANNEL UP is Low.
NO
Check MECHACON PWB.
Short-circuit between 38 and 39.
YES
When press CH select key on Front panel CH change?
NO
YES
38 REC MODE IN is Low?
NO
YES
Recording mode?
NO
YES
Auto CH Lock with REC mode
Short circuit around 38 Line
Check IC206
Short circ


TAPE COUNTER does not RESET.
IC211-(1) PULSE?
NO
YES
CLOCK, PROG DISPLAY OK?
NO
YES
Check IC206 and IC401.
DISPLAY flicker.
5 V
0 V
IC206-(40) PULSE?
NO
YES
Other operation OK?
NO
YES
Check IC206.
Check RESET SW.
Ex.
• CLOCK SET
• PROG-SET
• CLOCK
• TIMER REC

: 10 V
s than 1 V,
UP SW.

CON
tween

Short circuit R259 and R261?
NO
YES
Short circuit
Check IC207

0.78 msec
0.7 V
0 V
0.2–0.38 msec

Fig. 1

PRESET LED does not flash.
NO
IC204-⑦ square wave-form?
YES
No DISPLAY
NO
CH INDICATOR ON?
YES
Check Q203, K206.
NO
IC202-④ 5 V?
YES
Check L201, R217, C212, C213, C214.
NO
IC202-② OSC OK?
YES
Check Q208, Q209 on T/T SUB PWB.
NO
IC204-⑧ 30 V?
YES
Check RA201, IC207.
NO
IC202-⑲–㉒, ⑦ waveform OK?
5 V
0 V
YES
D214 LED check.
* Press STORE SW.
ON ON
OFF
NO
Check IC207.

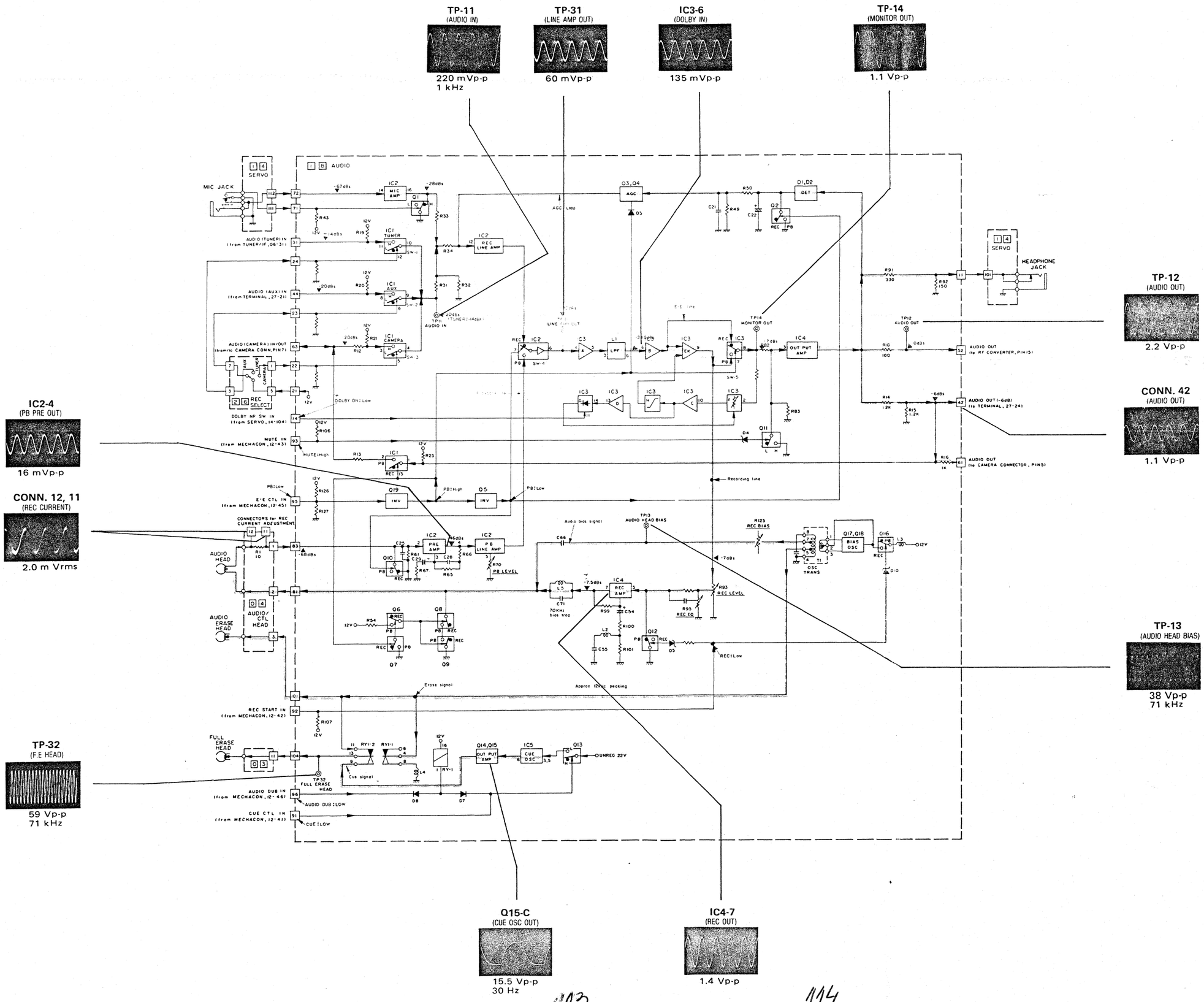
Notes:
If IC202-⑧ waveform as shown in Fig. 1.

Does not STORE.
80 msec
Check LPF, BPF.
NO
IC204-⑤ ripple is less than 40 mV.
YES
Set Program mode and PRESET SW ON.
Check STORE SW and IC207-⑱.
NO
PRESET LED flash?
YES
IC208, Q203 check.
NO
IC205-⑩ Low?
YES
Check Q206, Q207.
NO
IC205-⑨ −23 V?
YES
IC205 check.
NO
IC205-①, ②, ③, ⑰ OK?
10 V
0 V
OK
YES
Check 10 V line.
NO
IC205-④ 10 V, ⑩ 10 V OK?
YES
IC207-⑫–⑮ check.
NO
IC205-⑬–⑯ OK?
approx. 5 msec
10 V
0 V
OK
YES
Check R239, R238.
NO
IC205-⑦ V_{BT} 4 ± 0.3 V?
YES
Check IC205, IC202, IC207.

TAPE COUNTER does not count.
IC211-⑮ CLOCK PULSE OK?
NO
H > 1.25 V
L < 1.15 V
IC203-③ PULSE OK?
NO
H > 0.8 V
L < 0.4 V
㉛ T.U. REEL FG PULSE OK?
NO
Check MECHACON PWB.
YES
Check R251, 253, R254, R255, D216, C234.
YES
Check IC203.
YES
IC211-② PULSE OK?
NO
H > 4.5 V
L < 1.0 V
YES
IC211-① is High?
NO
IC211-① PULSE?
NO
IC211-① Low less than 1 V
NO
YES
YES
YES
IC208-② is Low?
NO
YES
Check IC206.
Check IC208 or IC211.
Counter PRESET SW ON or check IC206.
Check IC211.
Check IC208, IC211

Does not count, in FF (REW) mode.
IC206-㉛ OK?
YES
Check IC206.
FF: High (COUNT UP)
REW: LOW (COUNT DOWN)
NO
㊲ COUNT DOWN IN OK?
NO
Check IC211.
COUNT-UP: HIGH
COUNT DOWN: LOW
YES
Check pattern.

Audiosystem – Blockdarstellung · Audio system block diagram



Zeitdiagramm der Mechaniksteuerschaltung · Mechacon circuit timing chart

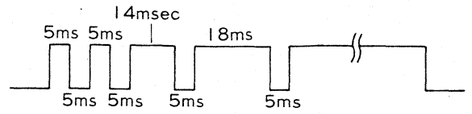
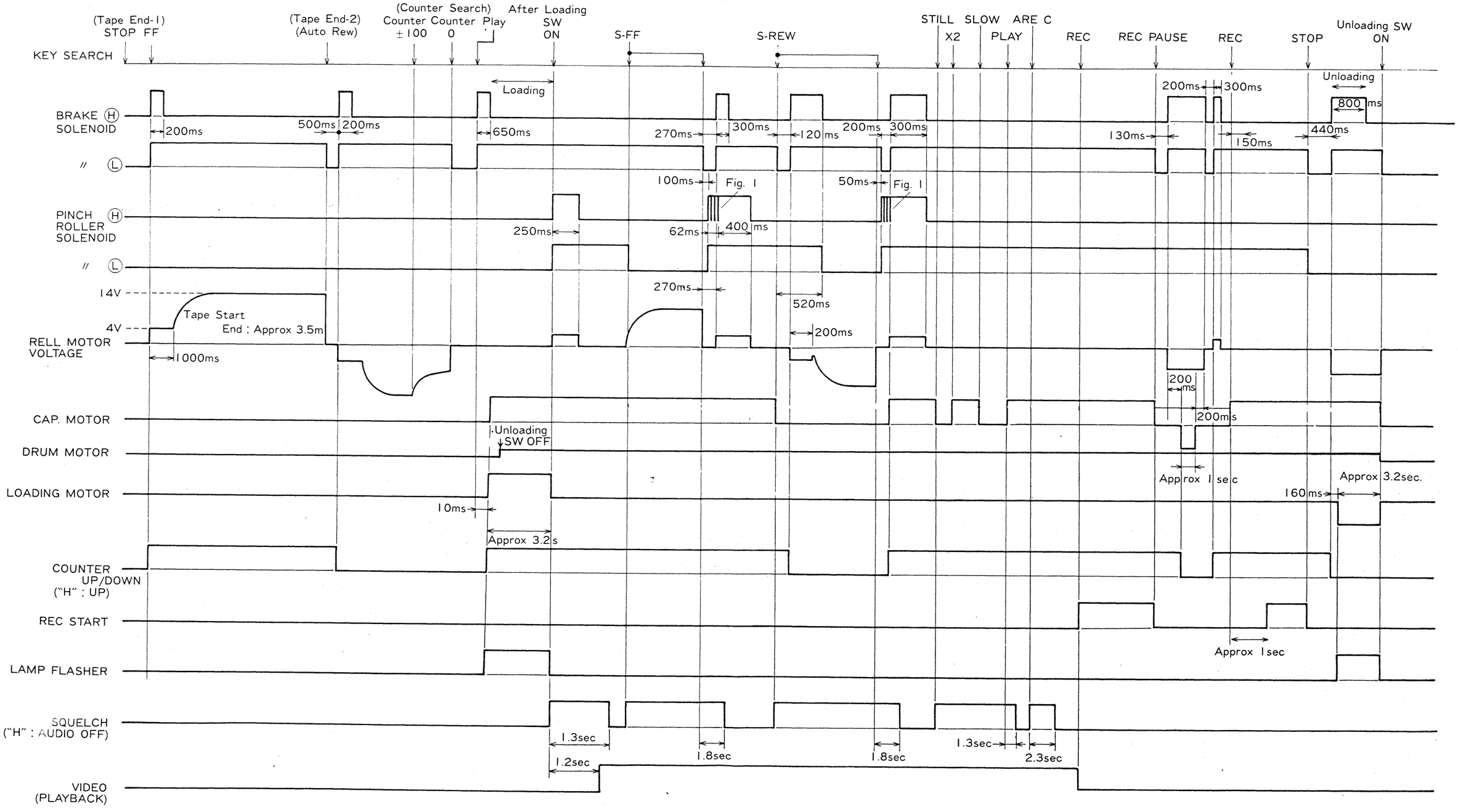
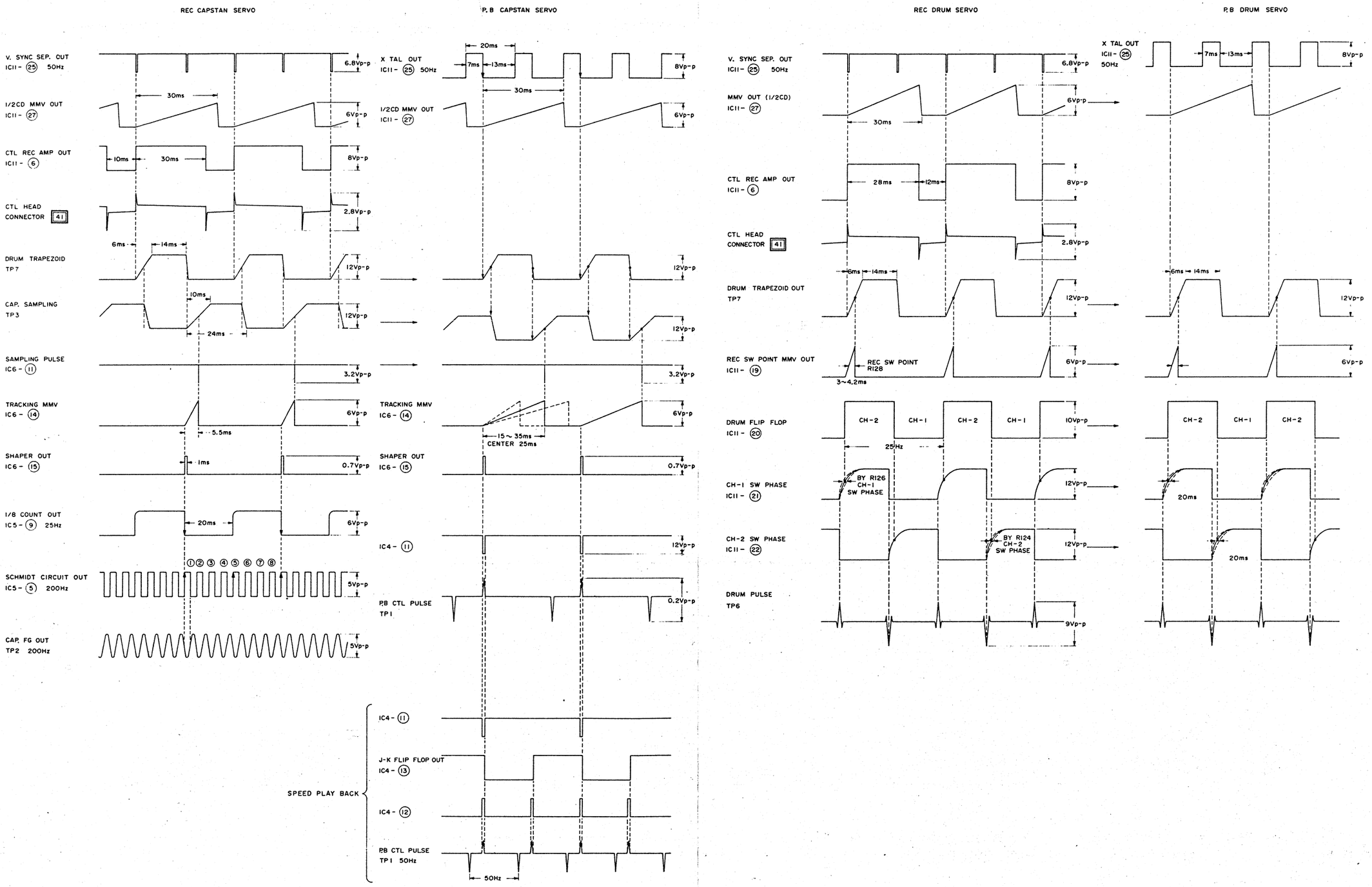


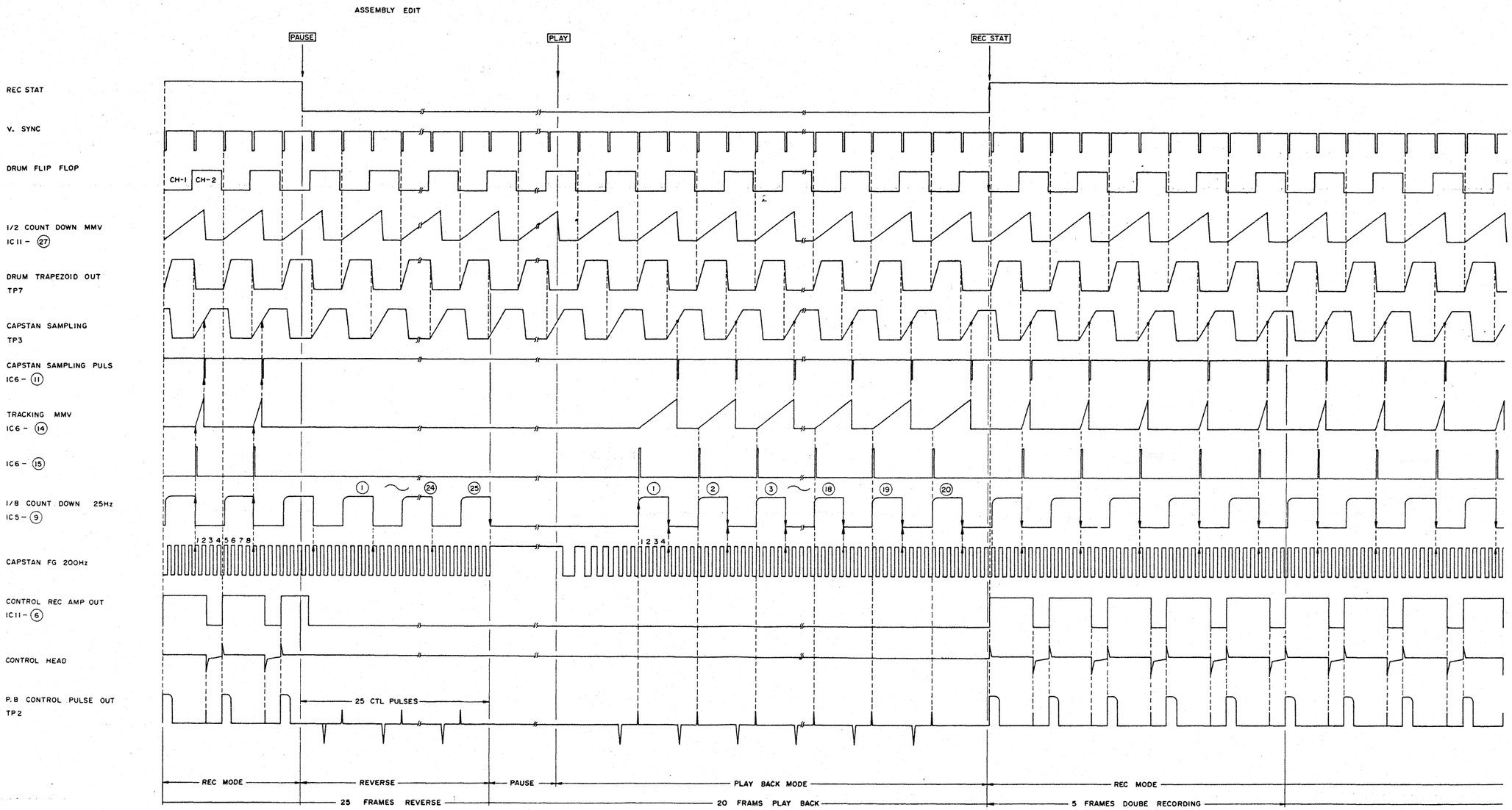
Fig. 1



Zeitdiagramm der Servo-Schaltungen · Servo circuit timing chart

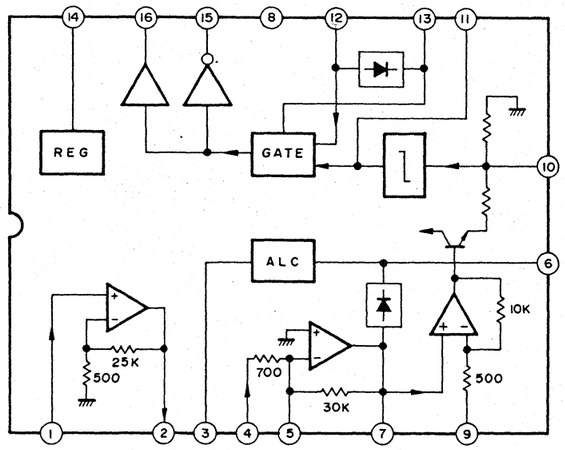


Zeitdiagramm für Servo bei Bildschnitt · Servo edit timing chart

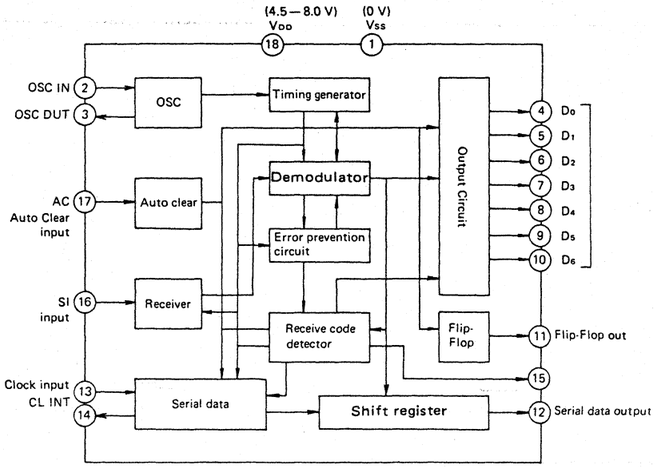


IC-Blockschaltungen · Schematic diagram of IC's

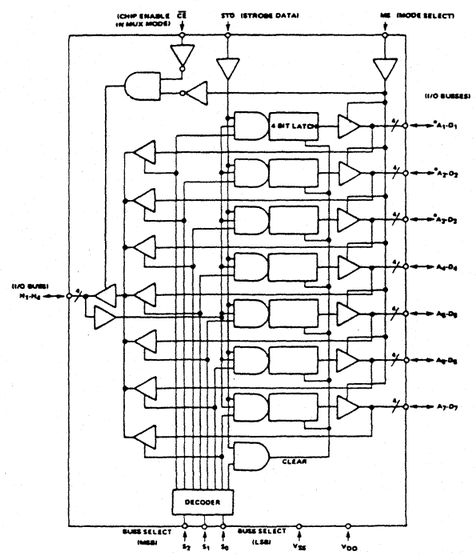
– M51014L –
IC1 of Mechacon



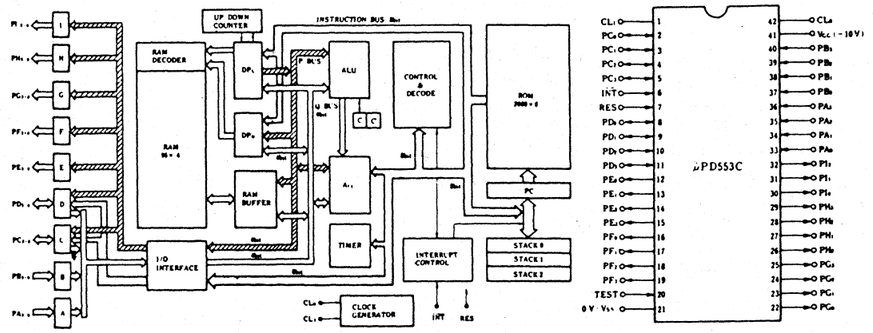
– M50127AP –
IC2 of Mecha-con



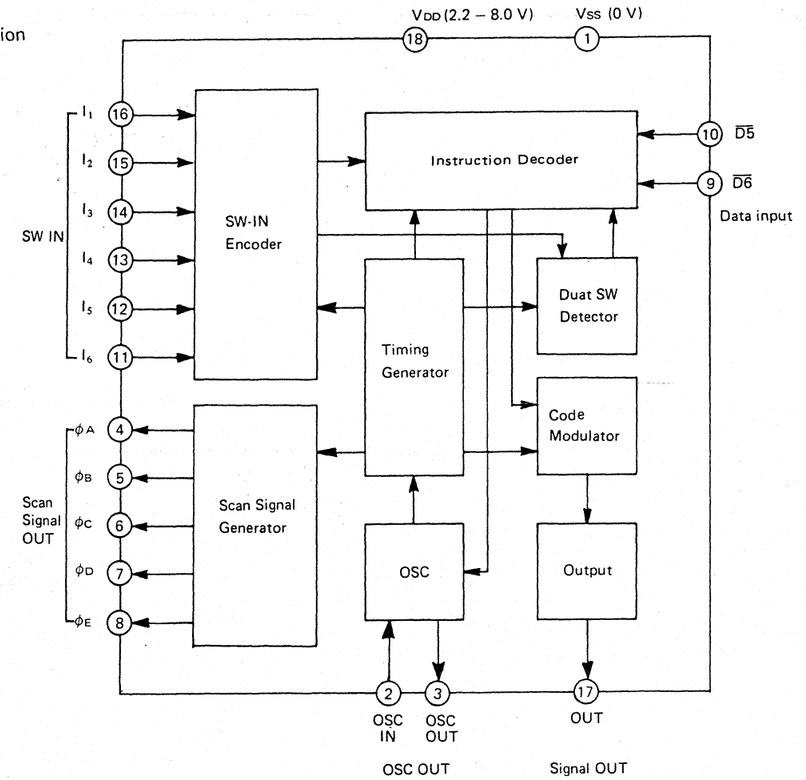
– TMS1025N2LL –
IC3, 4 of Mechacon



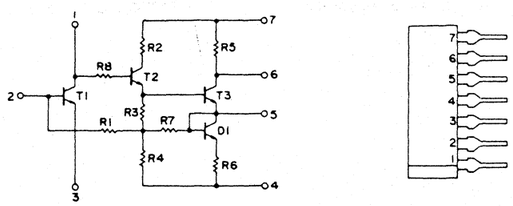
– UPD552C, UPD553C–
IC 207 of T/T CTL, IC401 of Display
IC 5 of Mecha-con, IC 16 of Servo



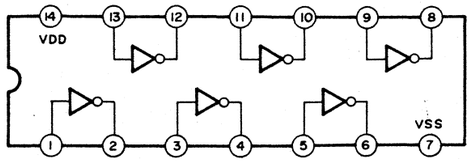
– M50115AP –
ICT of Operation



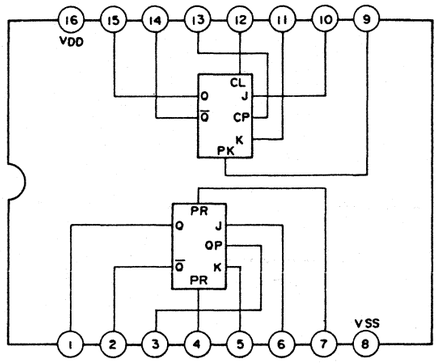
– AN360 –
IC1 of Servo



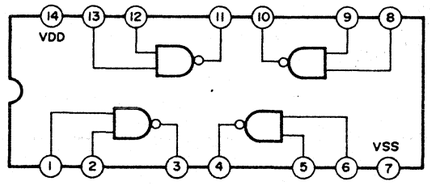
– TC4069BP –
IC2 of Servo



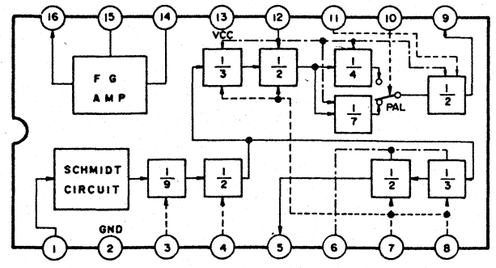
– TC4027BP –
IC3 of Servo



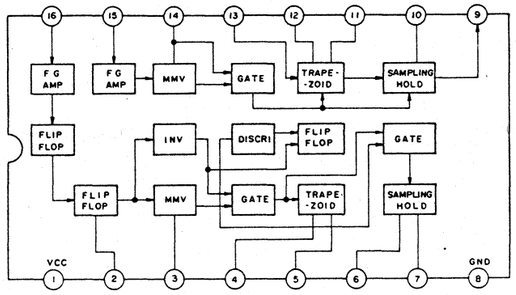
– TC4011BP –
IC4 of Servo



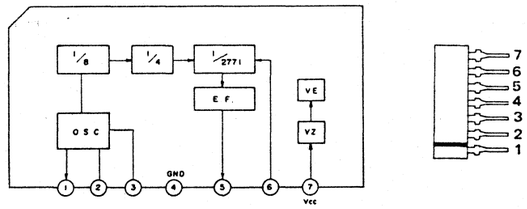
– AN6345 –
IC5 of Servo



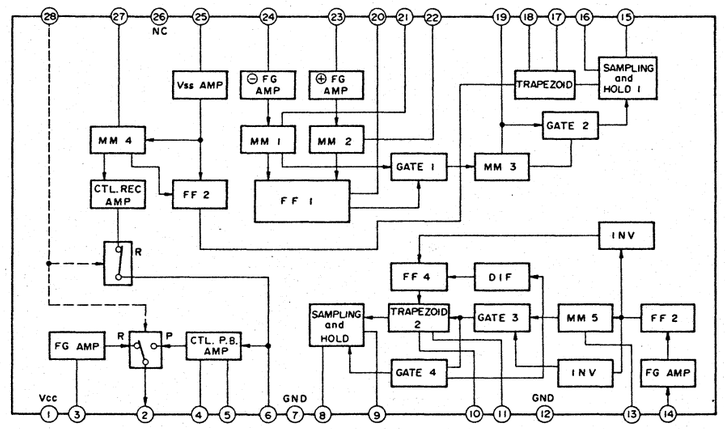
– AN6341N –
IC6 and 10 of Servo



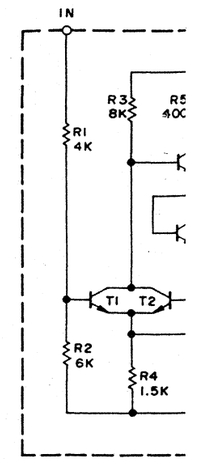
– AN6342N –
IC9 of Servo



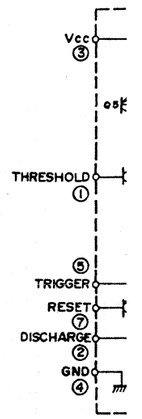
– AN6350 –
IC11 of Servo



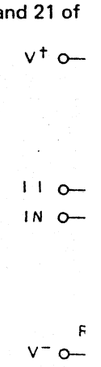
– DN850 –
IC15 of Servo



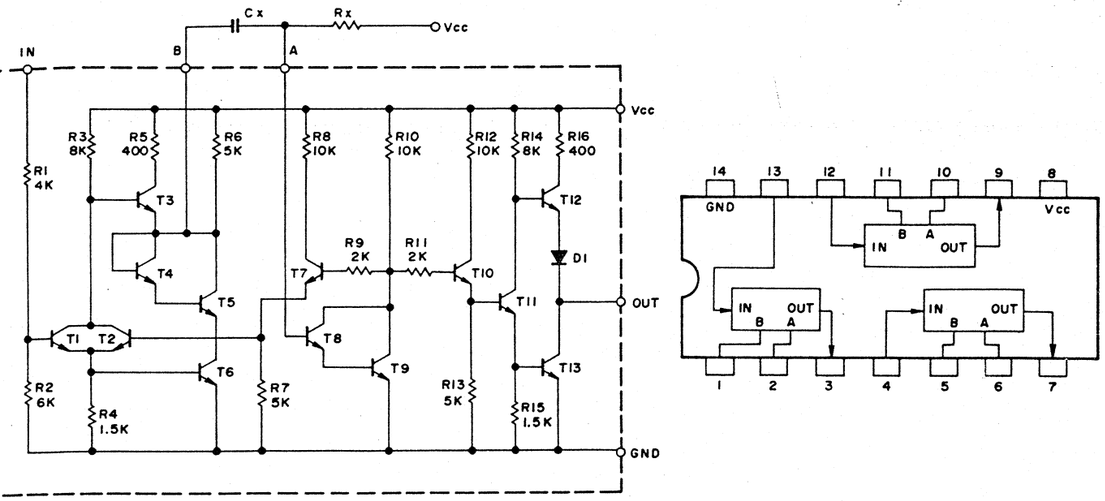
– BA222, 222V –
IC18 of Servo
IC5 of Audio



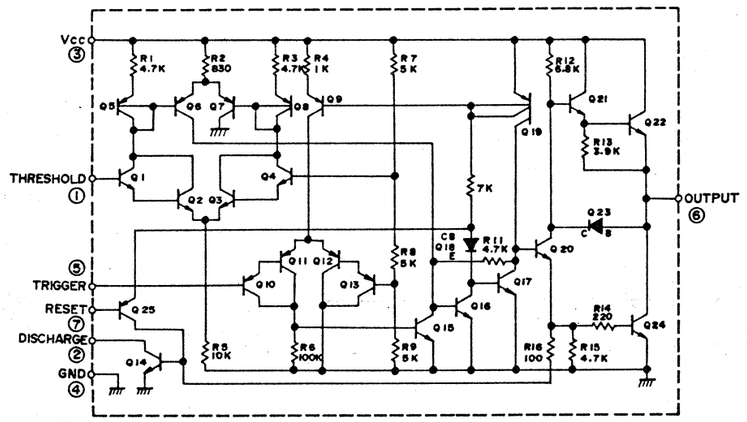
– UPC4558C –
IC19 and 21 of



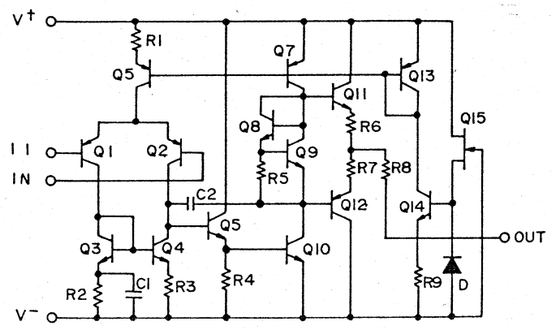
– DN850 –
IC15 of Servo

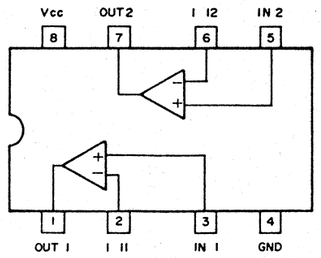


– BA222, 222V –
IC18 of Servo
IC5 of Audio

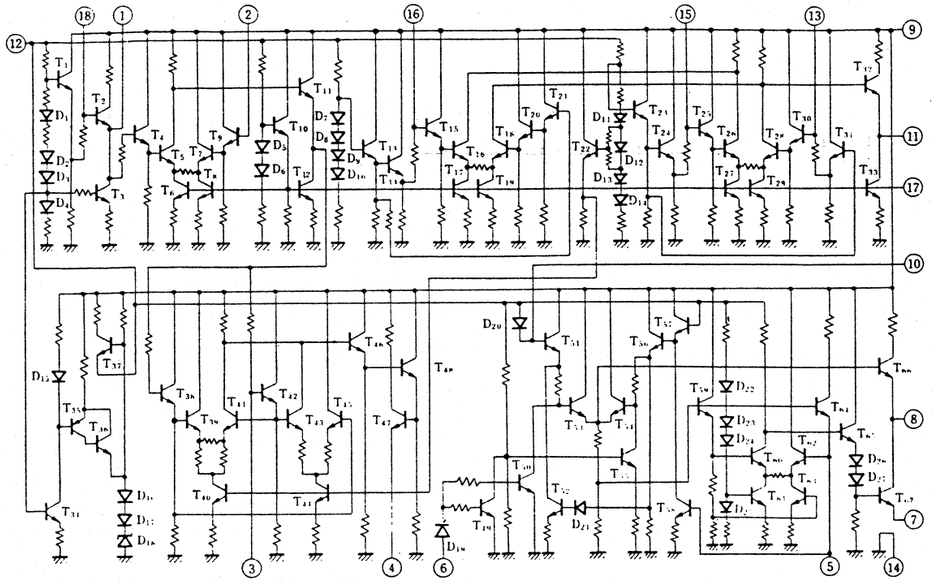


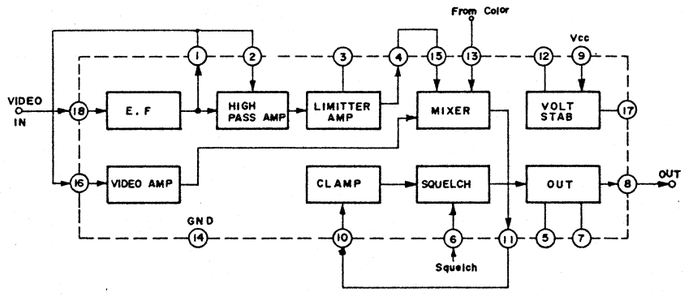
– UPC4558C –
IC19 and 21 of Servo



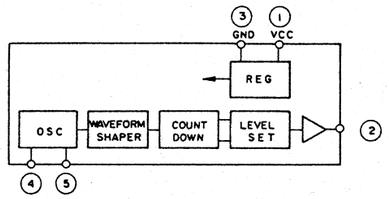


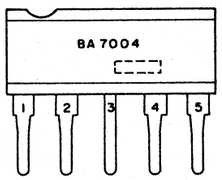
– AN303 –
IC 1 of Video Sub



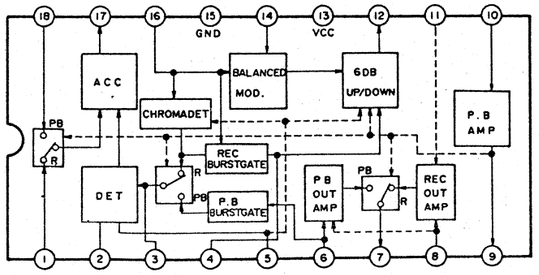


– BA7004 –
IC203 of Color

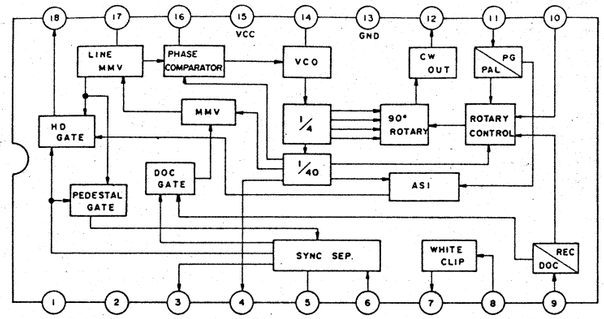




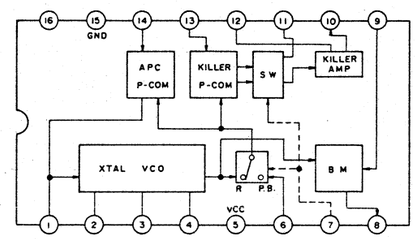
– AN6360 –
IC401 of Color



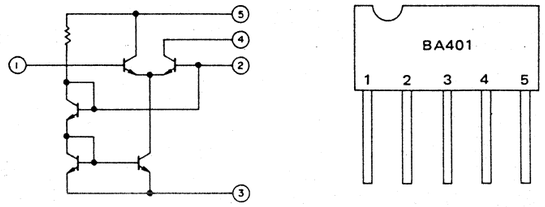
– AN6362 –
IC402 of Color



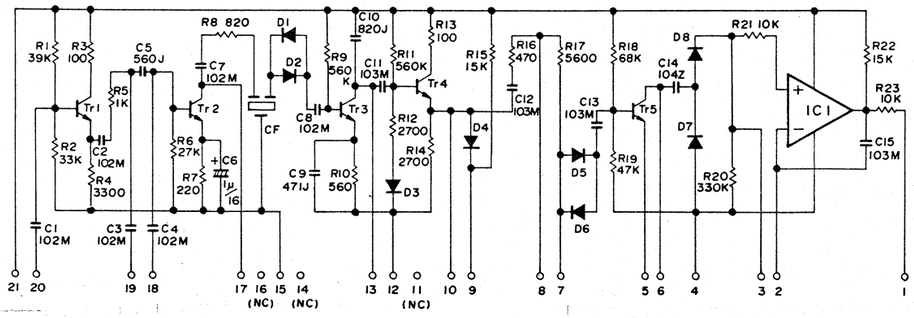
– AN6371 –
IC403 of Color

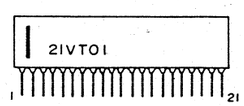


– BA401 –
IC404 of Color

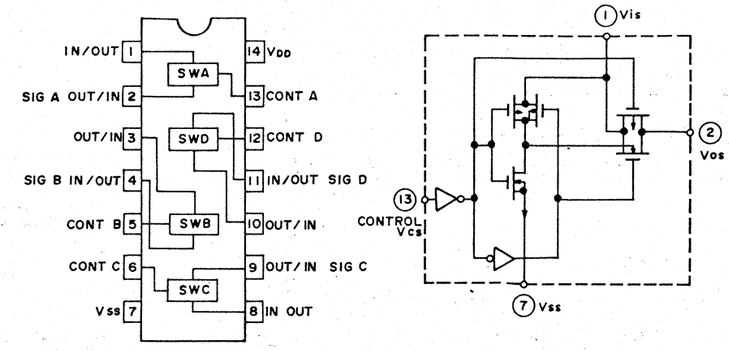


– 21VT08 –
IC405 of Color

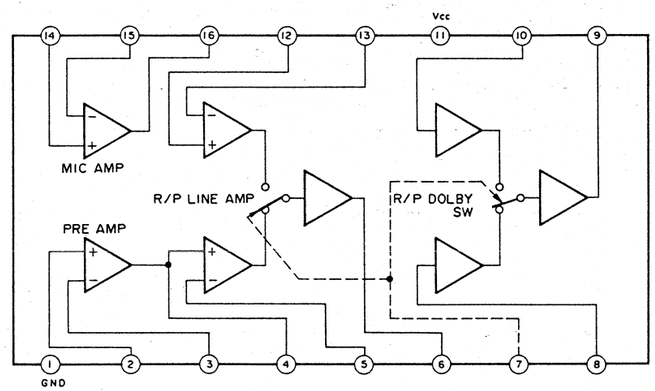




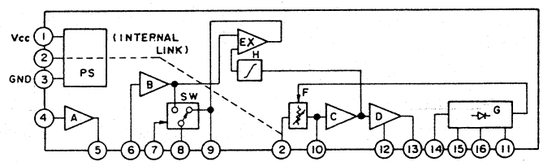
– UPD4066C –
IC1 of Audio



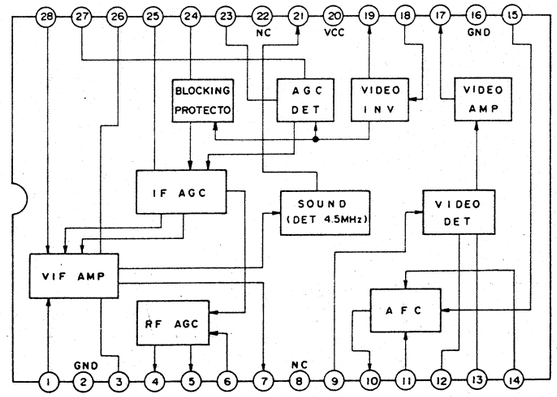
– HA12005 –
IC2 of Audio



– TA7629P –
IC3 of Audio

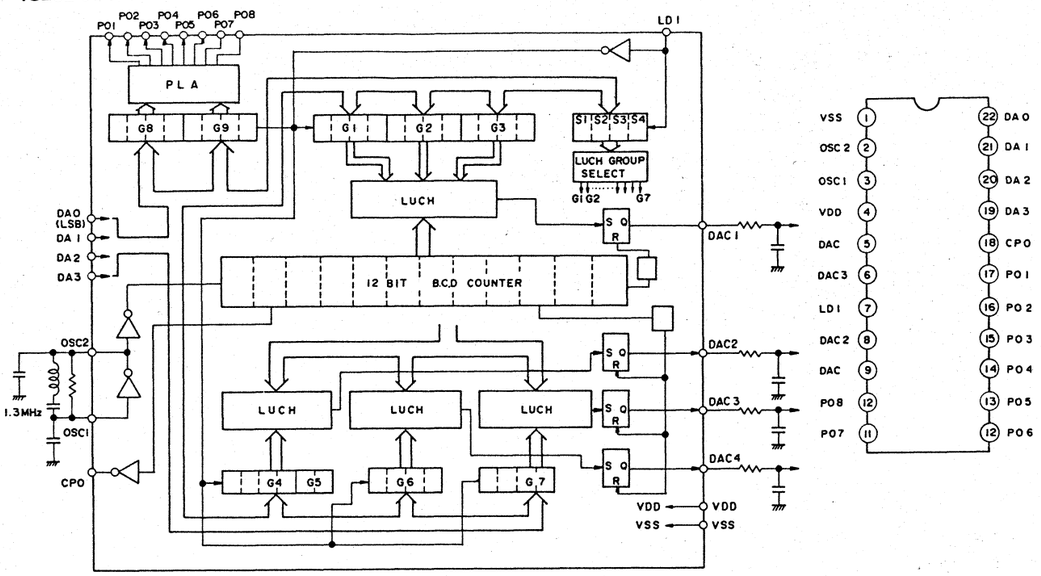


– AN5111 –
IC1 of Tuner/IF



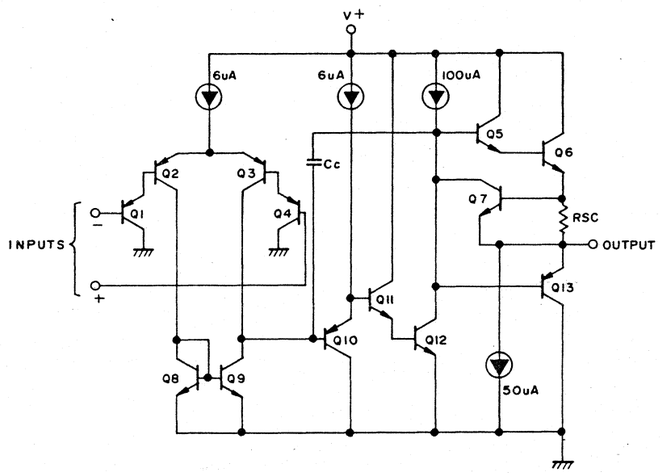
– MN1204E –

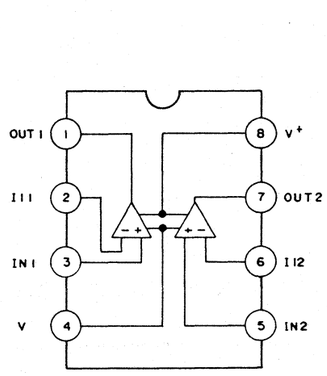
IC202 of T/T CTL



– UPC358C –

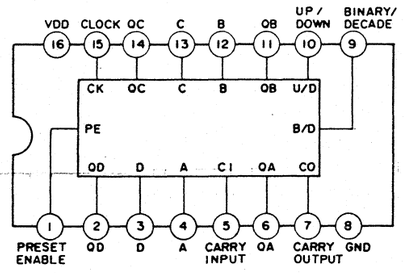
IC204 of T/T CTL





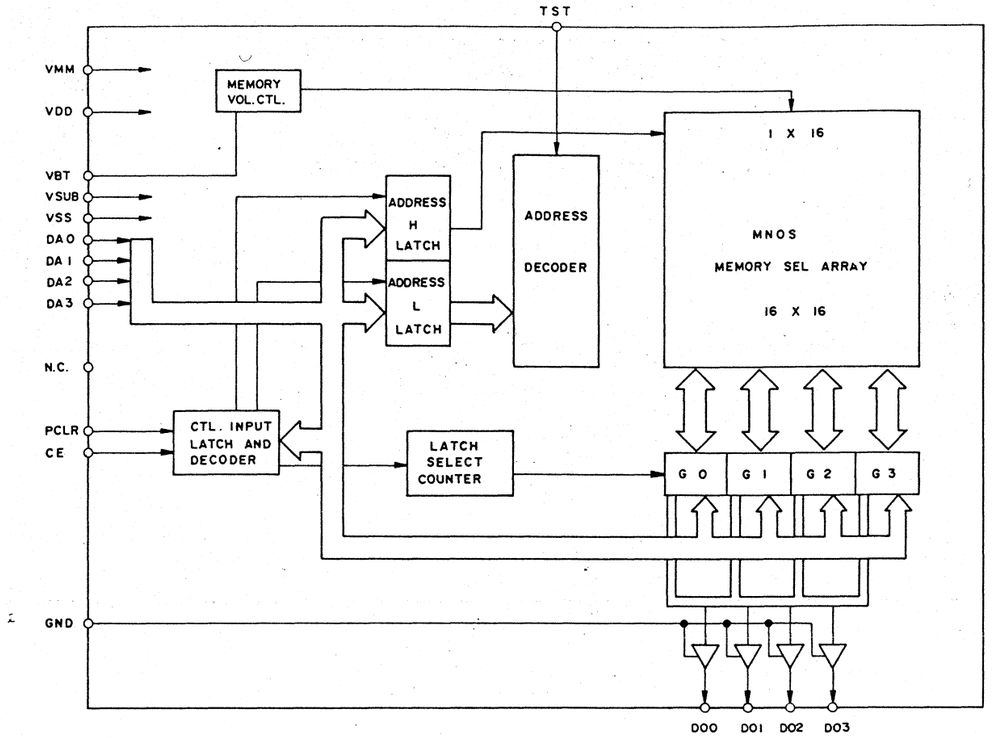
– UPD4029C –

IC211 of T/T CTL



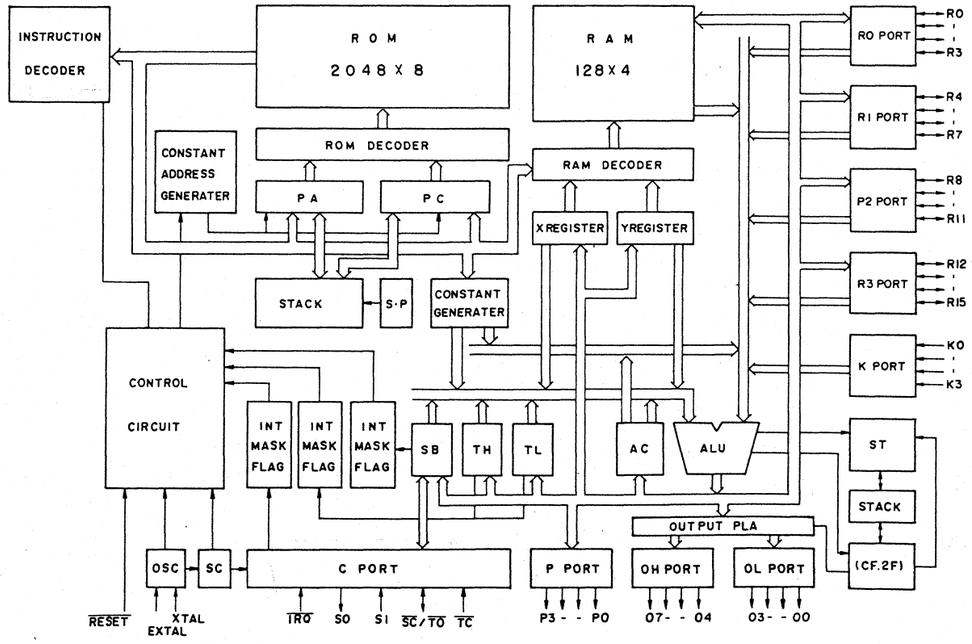
– MN1218A –

IC205 of T/T CTL



– MB8851AM-143L –

IC206 of T/T CTL



Ersatzteile VRV 630 · Spare Parts VRV 630

Position	Preis-gruppe	Bestell-Nr.	Bezeichnung
BS 4401			GEHÄUSE,VOLLST.
2	U	339.124.211	Frontplatte,vollst.
3	E	339.174.212	Klappe
4	D	339.174.208	Kassettenfachklappe
5	N*	339.904.207	Feder
6	N*	339.169.206	Stopper
10	S	339.124.214	Obere Abdeckung
11	F	339.174.213	Klappe
13	N*	339.224.209	Knopf
14	N*	339.174.209	Abdeckung
15	C	339.174.210	Abdeckung (A)
16	N*	339.224.206	Knopf
17	R*	339.224.208	Knopf
18	R*	339.224.207	Knopf
19	A	339.174.211	Abdeckplatte (D)
20	I	339.155.206	Bodenplatte
BS 4402			CHASSIS,VOLLST.
3	B	339.064.110	Fuß
4	A	339.234.207	Halter(2)
5	C	339.540.208	Kamerabuchse
13	R*	339.874.116	Stopper
15	Z	339.339.184	HF-Modulator
16	W*	339.139.206	HF-Modulatoraufnahme
26	J	339.234.206	Buchsenhalter
F 2	E	339.570.069	Sicherung 2 A
F 3/4	G	339.570.068	Sicherung 2,5 A
F 6	G	339.570.071	Sicherung 1,25 A
60	W*	339.174.214	Einsteller-Abdeckung
BS 4403			NETZTRAFO-EINHEIT
2	Y	339.314.206	Netztrafo
4	K	339.414.106	Spannungswähler-Adapter
5	C	339.414.109	Spannungswähler-Abdeckung
6	H	339.444.117	Wippschalter
7	V*	339.234.111	Abdeckung f.Wippschalter
F 1	G	339.570.071	Sicherung 1,25 A
13	K	339.484.106	Netzleitung
BS 4404			MECH.OBERTEIL
6	N*	339.904.126	Feder
7	J	339.749.122	Bremsgrundplatte
8	R*	339.749.121	Hauptaufwickelbremse
9	R*	339.749.119	Hauptabwickelbremse
10	R*	339.749.123	Bremsschuh
11	W*	339.904.128	Feder
12	C	339.749.120	Einfädelungsbremse
13	T*	339.854.113	Dämpfungsauflage
15		339.441.113	Geschw.-Umschalter
17	V*	339.729.118	Aufnahme-Sicherungshebel
22	C	339.904.120	Feder
24	Y	339.304.109	Wickelmotor
28	B	339.580.118	Elko
30	I	339.749.016	Abwickeleinfädelung
31	J	339.749.118	Aufwickeleinfädelung
36	P	339.344.207	Andruckrollenmagnet
37	N*	339.874.208	Federstift
41	A	339.829.207	Betätigungshebel
44	A	339.874.211	Halteplatte f.Feder
45	N*	339.874.212	Federhalter
46	N*	339.904.209	Feder
49	R*	339.829.209	Betätigungshebel
50	R*	339.904.210	Feder
51	B	339.754.206	Haltearm f.GA-Rolle
52	D	339.759.108	GA-Rolle,kpl.
56	J	339.744.009	ABW-Tellereinheit
57	A	339.729.122	Drucklager
61	J	339.744.010	Aufwickeltellereinheit
64	J	339.764.107	Wickelzwischenrad
65	V*	339.904.132	Feder
70	C	339.829.206	Freigabehebel
71	W*	339.904.133	Feder
72	P	339.829.138	Spannarm
76	N*	339.904.211	Feder
80	G	339.749.117	Bremsrad

Position	Preis-gruppe	Bestell-Nr.	Bezeichnung
84	G	339.769.109	Aufwickel-Zwischenrad
87	U*	339.874.210	Endsensorhalter
88	R*	339.874.209	Sensorhalter
BS 4405			MECH.UNTERTEIL
201	W*	339.904.135	Feder
202	X	339.304.206	Capstanmotor
204	E	339.590.090	Durchführungskondensator,kpl.
208	B	339.580.118	Elko
210	J	339.729.123	Lager f.Capstanwelle
214	M	339.714.207	Capstanschwungmasse
215	G	339.734.009	Einfädelriemen
219	A	339.729.124	Drucklager
220	R*	339.914.206	Klemme
222	U*	339.744.206	Bremshebel
224	K	339.344.208	Bremsmagnet
225	K*	339.874.207	Federstift
226	N*	339.904.208	Feder
231	A	339.444.114	Induktorspule
232	J	339.354.107	Aufnahmeknopf
235	P	339.729.125	Einfädelantrieb,kpl.
236	Z	339.304.208	Wickelmotor
237	B	339.590.103	Keramik-Kondensator
240	I	339.734.108	Riemen
242	U*	339.829.211	Freigabehebel f.Bandrückzug
243	W*	339.904.138	Feder
244	U*	339.829.209	Betätigungshebel
247	G	339.749.129	Aufwickelkupplung
249	V*	339.734.109	Kupplungsriemen
252	U*	339.935.206	Befestigungsstütze
BS 4406			ZWISCHENDECK-MECH.TEILE
2	A	339.566.112	Löschkopfhalter
3	I	339.769.110	Spannrolleneinheit
5	P	339.359.106	Gesamtlöschkopf
8	A	339.904.010	Feder
9	E	339.829.131	Führungsstift
10	A	339.829.132	Führungsflansch
11	R*	339.829.109	Nylon-Mutter
12	P*	339.909.950	Feder
13	R*	339.904.011	Federplatte
14	V	339.354.207	Audio-Kontrollkopf
16	P*	339.909.950	Feder
20	M	339.729.119	Abwickelführung,kpl.
21	M	339.729.120	Aufwickelführung,kpl.
23	T*	339.919.108	Federplatte
26	O	339.729.115	Führung,rechts
28	A	339.566.067	Lampengehäuse
31	R*	339.933.108	Masseanschlußfahne
BS 4407			KOPFTROMMELEINHEIT
101	Z	339.714.110	Obere Kopftrommeleinheit
102	Z	339.714.206	Kopftrommel-Motor
104	P*	339.444.008	Massekontakt
105	I	339.714.009	Heizung
107	W*	339.729.121	Haltewinkel
111	G	339.409.007	Kontaktfedereinheit
BS 4408			KASSETTEN-AUFNAHME
3	N*	339.904.206	Feder
4	K	339.174.207	Kassettengehäuse-Unterteil,kpl
12	R*	339.829.208	Entrasthebel
14	A	339.904.124	Feder
15	R*	339.829.213	Schiebeplatte,kpl.
16	W*	339.904.012	Feder
17	L	339.769.107	Achse m.Rollen
19	A	339.809.007	Rollenlager
20	G	339.874.213	Führungsstütze,rechts
22	A	339.874.214	Achse
25	A	339.809.010	Schneckenrad
26	A	339.734.008	Riemen
28	R*	339.904.007	Feder
29		339.304.207	Kassettenmotor,kpl.
33	H	339.809.008	Kette

Position	Preis-gruppe	Bestell-Nr.	Bezeichnung
34	E	339.829.127	Kettenzahnrad
35	A	339.809.009	Zahnrad
37	C	339.444.113	Mikroschalter
39	W*	339.874.215	Führungsstütze,links
40	M	339.809.011	Getriebeverbindungsachse
42	R*	339.874.216	Hilfsplatte
46	X	339.174.206	Kassettengehäuse,kpl.
BS 4409			FERNBEDIENUNGSEINHEIT
1	Q	339.183.218	Gehäuseoberschale
2	M	339.183.219	Gehäuseunterschale
3	D	339.183.220	Batteriefachdeckel
4	U*	339.183.221	IR-Fenster
5	V*	339.183.222	Knopf,dunkelgrau
6	V*	339.183.212	Knopf,rot
7	H*	339.183.213	Tastengummi
9	A	339.183.214	Kontakt
10	A	339.183.215	Kontakt
11	A	339.183.216	Kontakt
15	V*	339.183.217	Aufkleber
BS 4411			ZUBEHÖR
1	L	339.489.117	Antennenkabel
BS 4501			STARTSENSORPLATTE
PTO 1	I	339.556.242	Photo-Transistor PN 202 S
BS 4502			ENDSENSORPLATTE
PTO 2	I	339.556.242	Photo-Transistor PN 202 S
BS 4506			HF-ZF-PLATTE
IC 1	K	339.575.160	IC-AN 5111
IC 2	I	339.575.303	IC-UPC 1391 H
Q 1	D	339.556.462	Transistor 2 SC 2188
Q 2/3/5/6	U*	339.556.557	Transistor 2 SC 2647 BC
Q 4	B	339.556.467	Transistor 2 SD 637 QR
Q 7/8	A	339.556.320	Transistor 2 SB 641 RS
Q 9	C	339.556.304	Transistor 2 SA 1020 OY
D 1/2	U*	339.529.425	Diode RD 6,8 EB 3
D 3-6	T*	339.529.343	Diode 1 SS 133
R 9	A	339.509.153	Einsteller 2,2 KOhm
R 34	A	339.509.145	Einsteller 4,7 Ohm
R 46	A	339.509.146	Einsteller 10 KOhm
L 1	A	339.349.163	Resonanzspule
L 2	A	339.349.023	Resonanzspule
L 3	A	339.349.028	Resonanzspule
L 4	A	339.349.037	Resonanzspule
L 5	B	339.349.141	Resonanzspule
SAW 1	M	339.369.119	Filter
CF 2	E	339.369.122	Keramik-Filter
CF 4	E	339.369.213	Keramik-Filter
CF 6	F	339.369.123	Keramik-Filter
T 1	B	339.369.120	ZF-Filter
T 2	B	339.349.017	AFC-Spule
T 3	A	339.349.019	Spule
T 4	A	339.369.212	Spule
T 5	D	339.367.118	ZF-Filter
BS 4507			TUNER-TIMER-STEUERUNGSPLATTE
IC 202	K	339.575.398	IC-MN 1204 E
IC 203	H	339.575.409	IC-MB 3761 M
IC 204	H	339.575.172	IC-UPC 358 C
IC 205	P	339.575.399	IC-MN 1218 A
IC 206	S	339.575.410	IC-MB 8851 AM 143 L
IC 207	O	339.575.405	IC-UPD 552 C-088
IC 208/209	F	339.575.408	IC-IR 2403
IC 211	K	339.575.403	IC-UPD 4029 C
IC 212	F	339.575.408	IC-2403
Q 201/202	W*	339.556.314	Transistor 2 SD 637 R
Q 203	C	339.556.232	TRansistor 2 SB 643 R
Q 204	G	339.556.269	Transistor 2 SC 1983 R
D 202/203	B	339.529.274	Diode 10 E 2
D 204/206 207/208/ 211-213/ 215-221	P*	339.529.230	Diode 1 SS 133

Position	Preis-gruppe	Bestell-Nr.	Bezeichnung
D 205	U*	339.529.416	Diode HZ 6 A-1 L
D 209	U*	339.529.417	Diode HZ 6 B 3
D 214	B	339.529.324	LED SLP 135 B
R 234	H	339.509.206	Einsteller
L 201	A	339.349.024	Resonanzspule
CP 1	C	339.575.413	IC-ICP-F 10
X'tal 201	I	339.349.206	Quarz
CF 201	F	339.369.011	Keramik-Filter
S 201	D	339.444.213	Schiebeschalter
S 202	C	339.444.214	Schiebeschalter
BS 4508			ANZEIGEPLATTE
IC 401	O	339.575.404	IC-UPD 552 C-079
D 401-412	B	339.529.228	LED SLR 54 MT 4
CF 401	F	339.369.011	Keramik-Filter
	B	339.444.116	Taktschalter
	B	339.874.217	Halter für Anzeige
BS 4509			FARBPLATTE
IC 201/202	F	339.575.389	IC-BA 7001
IC 203	I	339.575.298	IC-BA 7004
IC 401	L	339.575.294	IC-AN 6360
IC 402	N	339.575.295	IC-AN 6362
IC 403	L	339.575.296	IC-AN 6371
IC 404	G	339.575.137	IC-BA 401
IC 405	Q	339.575.411	IC-21 VT 08
Q 101	G	339.556.313	Transistor 2 SD 1128-02
Q 102/103	C	339.556.232	Transistor 2 SB 643 R
105/107			
C 104/106 108/109/ 201/202/ 204-208/ 401-408/ 410	B	339.556.468	Transistor 2 SC 2021 Q
Q 203	A	339.556.287	Transistor 2 SD 638 QR
Q 409	U*	339.556.312	Transistor 2 SC 2647 C
D 101	B	339.529.341	Diode HZ 9 A 1
D 102	B	339.529.330	Diode MA 27 TA
D 103-109 201-207/ 401-406	W*	339.529.109	Diode MA 150
R 441	C	339.509.011	Einsteller
R 465	B	339.509.954	Einsteller
L 202	A	339.349.161	Spule
L 203	A	339.349.162	Spule
L 201/401-403/405/406/411/417	A	339.349.156	Spule
L 404	A	339.349.217	Spule
L 407	A	339.349.170	Spule
L 408	A	339.349.169	Spule
L 409	A	339.349.165	Spule
L 412	D	339.344.966	Spule
L 413	A	339.349.160	Spule
L 414	B	339.349.029	Spule
L 415	B	339.349.009	Spule
L 416	B	339.349.030	Spule
L 418	F	339.349.988	Spule
IB 102	B	339.537.127	Hybrid-Schaltung
IB 103	B	339.537.128	Hybrid-Schaltung
IB 104	B	339.537.129	Hybrid-Schaltung
DL 401	R	339.489.114	Verzögerungsleitung
CF 201	F	339.369.125	Keramik-Filter
BPF 401/ 402	K	339.369.013	Bandpass-Filter
BPF 403	I	339.369.017	Bandpass-Filter
LPF 401	G	339.369.016	Hochspannungsfilter
EQ 201	J	339.339,966	Entzerrer
X 401	N	339.349.153	Quarz
X 402	O	339.349.152	Quarz
BS 4510			NETZTEILPLATTE
Q 1/5/7/8	W*	339.556.315	Transistor 2 SD 637 S
Q 3/10	B	339.556.246	Transistor 2 SD 639 RS
Q 4	W*	339.556.314	Transistor 2 SD 637 RS
Q 9	B	339.556.561	Transistor 2 SD 895 DE

Position	Preis-gruppe	Bestell-Nr.	Bezeichnung
Q 11	C	339.556.306	Transistor 2 SC 2655 OY
DS 1/2	W*	339.529.424	Diode DSFB 10
D 5/13	W*	339.529.203	Diode H 212 C-3 L
D 6/14	W*	339.529.181	Diode 1 S 2076 A
D 7	W*	339.529.200	Diode HZ 7 A 1 L
D 8	B	339.529.274	Diode 10 E 2
D 9-12	C	339.529.119	Diode VO 3 C
R 15	U*	339.509.218	Einsteller
RY 1	N	339.364.107	Relais
BS 4512			MECH.STEUERUNGSPLATTE
IC 1	I	339.575.394	IC-M 5 101 WL
IC 2	P	339.575.393	IC-M 5 0127 AP
IC 3/4	R	339.575.309	IC-TMS 1025 N 2 LL
IC 5	Q	339.575.412	IC-UPD 553 C 174
IC 6	I	339.575.304	IC-UPD 339 C
IC 7-9/ 11-13	I	339.575.347	IC-M 5 4519 P
IC 10	I	339.575.305	IC-UPD 4050 C
IC 14	E	339.575.397	IC-M 5 4532 P
Q 1-9	C	339.556.304	Transistor 2 SA 1020 OY
Q 10/11	C	339.556.306	Transistor 2 SC 2655 OY
Q 12/13/22	A	339.556.283	Transistor 2 SB 641 Q
Q 14/15	O	339.556.558	Transistor 2 SC 2877 OY
Q 16/17/ 20/21	W*	339.556.314	Transistor 2 SD 637 R
Q 18/19	D	339.556.559	Transistor 2 SC 3070
Q 23	D	339.556.457	Transistor 2 SK 34 C
D 1	G	339.529.210	Photo-Diode PH 302
D 2-15	U*	339.529.035	Diode 1 S 2473
D 16-23	A	339.529.191	Diode WO 3 C
D 24	U*	339.529.420	Diode HZ 9 B 3 L
D 25	U*	339.529.414	Diode HZ 16-2 L
D 26	U*	339.529.419	Diode HZ 7 B 2 L
D 27-33 35-38	U*	339.529.035	Diode 1 S 2473
D 34	W*	339.529.203	Diode HZ 12 C 3 L
IB 1	B	339.537.124	Hybrid-Schaltung
IB 2	B	339.537.121	Hybrid-Schaltung
CF 1	F	339.369.011	Keramik-Filter
CF 2	F	339.369.012	Keramik-Filter
BS 4513			TASTENPLATTE
IC 1	O	339.575.149	IC-M 50115 AP
Q 1	A	339.556.286	Transistor 2 SD 636 QR
D 1	A	339.529.108	Diode 1 S 2473 HJ
D 2	U*	339.529.419	Diode HZ 7 B 2 L
D 3	U*	339.529.418	Diode HZ 6 C 2 L
D 4/5/6	U*	339.529.117	Diode 1 S 2473
D 7/8/9	A	339.529.191	Diode WO 3 C
D 11/13	B	339.529.423	LED SLR 34 MT 5
D 12/ 14-26	C	339.529.359	LED GL 3 HD 5
CF 1	F	339.369.018	Keramik-Filter
S 1	G	339.444.110	Hebelschalter
S 2-12	B	339.444.116	Taktschalter
BS 4514			SERVOPLATTE
IC 1	G	339.575.075	IC-AN 360
IC 2	F	339.575.188	IC-TC 4069 BP
IC 3	G	339.575.401	IC-TC 4027 BP
IC 4	F	339.575.184	IC-TC 4011 BP
IC 5	L	339.575.386	IC-AN 6345
IC 6/10	L	339.575.133	IC-AN 6341 N
IC 7/12	I	339.575.245	IC-TC 4066 BP
IC 8/13/14	I	339.575.056	IC-UPC 1458 C
IC 9	L	339.575.261	IC-AN 6342 N
IC 11	Q	339.575.387	IC-AN 6350
IC 15	K	339.575.199	IC-DN 850
IC 16	Q	339.575.407	IC-UPD 553 C-177
IC 17	R	339.575.383	IC-HA 1308
IC 18	H	339.575.136	IC-BA 222 V
IC 19/21	G	339.575.120	IC-UPC 4558 C
IC 20	I	339.575.304	IC-UPC 339 C
IC 22/23/ 24	I	339.575.347	IC-M 54519 P

Position	Preis-gruppe	Bestell-Nr.	Bezeichnung
Q 1/4/6/ 10/11/20-30 33-36/38-40	U*	339.556.327	Transistor 2 SD 636 RS
Q 2/5/7/12 31/32/37	C	339.556.232	Transistor 2 SB 643 RS
Q 16/17/18	B	339.556.306	Transistor 2 SC 2655 OY
D 1-8 10-14/ 16-30	U*	339.529.117	Diode 1 S 2473
D 9	A	339.529.413	Diode AW 08-16
D 15	U*	339.529.416	Diode HZ 6 A 1 L
D 31-33	U*	339.529.191	Diode WO 3 C
R 23	A	339.509.207	Einsteller
R 31/94/ 124/126	F	339.509.009	Einsteller
R 54	B	339.509.953	Einsteller
R 128	F	339.509.010	Einsteller
R 136	E	339.509.208	Einsteller
R 160	A	339.509.207	Einsteller
R 164/218	C	339.502.216	Einsteller
R 212	A	339.509.209	Einsteller
R 233	C	339.509.210	Einsteller
IB 1	B	339.537.125	Hybrid-Schaltung
IB 2	B	339.537.122	Hybrid-Schaltung
IB 3	B	339.537.123	Hybrid-Schaltung
IB 4	B	339.537.126	Hybrid-Schaltung
LPF 1	F	339.369.207	LP-Filter
CF 1	E	339.369.011	Keramik-Filter
X'tal 1	O	339.349.152	Quarz
SW 1	C	339.444.124	Schiebeschalter
SW 2	D	339.444.208	Schiebeschalter
SW 3	B	339.444.210	Schiebeschalter
BS 4515			Y-UND AUFNAHME/WIEDERGABEPL.
IC 204	T	339.575.300	IC-HA 11738
IC 205	T	339.575.299	IC-HA 11724
Q 211/ 213-215/ 217/219-220/224-227/230/231	A	339.556.249	Transistor 2 SC 2021 QRS
Q 212/216/ 218	B	339.556.468	Transistor 2 SC 2021 Q
Q 221/223	A	339.556.308	Transistor 2 SB 745 S
Q 228	A	339.556.307	Transistor 2 SA 874 QR
Q 229	A	339.556.337	Transistor 2 SC 1652 QR
D 210-213 215/216	W*	339.529.109	Diode MA 150
D 214/218	A	339.529.193	Diode RD 3,6 EB
D 217	B	339.529.360	Diode MA 27 TB
R 257/297/ 311/337	R*	339.509.211	Einsteller
R 292/344 379	R*	339.509.218	Einsteller
R 318	R*	339.509.212	Einsteller
R 340	A	339.537.132	Thermistor
R 360	R*	339.509.213	Einsteller
L 205	U*	339.349.207	Spule
L 206/209/ 213/218-220 224/227/230	A	339.349.156	Spule
L 207/210	A	339.349.168	Spule
L 211	A	339.349.167	Spule
L 212	U*	339.349.209	Spule
L 208	A	339.349.208	Spule
L 214	A	339.349.165	Spule
L 215	U*	339.349.210	Spule
L 216	B	339.349.026	Spule
L 217	U*	339.349.211	Spule
L 221/228	A	339.349.171	Spule
L 222/223	A	339.349.175	Spule
L 225	A	339.349.170	Spule
L 226	U*	339.349.212	Spule
L 229	A	339.349.161	Spule
DL 201	R	339.489.115	Verzögerungsleitung
LPF 201	I	339.369.014	Tiefpassfilter
LPF 202	H	339.369.128	Tiefpassfilter
EQ 202	I	339.339.020	Entzerrer

Position	Preis-gruppe	Bestell-Nr.	Bezeichnung
BS 4518			AUDIOPLATTE
IC 1	I	339.575.081	IC-UPD 4066 C
IC 2	K	339.575.146	IC-HA 12005
IC 3	A	339.575.400	IC-TA 7629 P
IC 4	H	339.575.152	IC-NYM 4560 O
IC 5	H	339.575.086	IC-BA 222
Q 1/3/5/7 10-12/15	U*	339.556.327	Transistor 2 SD 636 RS
Q 2/19	A	339.556.320	Transistor 2 SB 641 RS
Q 4	U*	339.556.475	Transistor 2 SD 661 S
Q 6	A	339.556.323	Transistor 2 SB 788 TU
Q 8/9	A	339.556.332	Transistor 2 SD 958 TU
Q 13/14	A	339.556.321	Transistor 2 SB 644 RS
Q 16	C	339.556.304	Transistor 2 SA 1020 OY
Q 17/18	B	339.556.246	Transistor 2 SD 639 S
D 1-3/7/8 11-13	W*	339.529.109	Diode MA 150
D 4	B	339.529.336	Diode RD 6,8 EB 2
D 6/14	B	339.529.274	Diode 10 E 2
D 9	W*	339.529.192	Diode HZ 15-3
R 70	U*	339.509.214	Einsteller
R 93/95	U*	339.509.215	Einsteller
R 125	U*	339.509.216	Einsteller
L 1	H	339.369.208	LP-Filter
L 2	F	339.349.988	Spule
L 3	U*	339.349.213	Spule
L 4	U*	339.349.214	Spule
L 5	A	339.342.032	Spule
T 1	J	339.369.954	Filter
RY 1	M	339.364.108	Relais
BS 4519			PLATTE F.LEISTUNGS-TRANSISTOR
Q 2/6	H	339.556.310	Transistor 2 SC 2484 P
BS 4520			PLATTE F.WICKELTELLER-FG
P 101	G	339.274.206	Lichtschranke
BS 4521			PLATTE F.AUFWICKELTELLER-FG
P 102	G	339.274.206	Lichtschranke
BS 4526			PLATTE F.AUFNAHMEWAHLSCHALTER
	E	339.444.209	Schiebeschalter
BS 4527			ANSCHLUSSPLATTE
D 001/002	A	339.529.108	Diode 1 S 2473 HJ
D 003	U*	309.327 971	Diode MA 161
	M	339.364.008	Relais
BS 4528			PL.F.LICHTSCHRANKE/KASSETTE
P 103	G	339.274.206	Lichtschranke
BS 4530			ZUSATZ-TUNER/TIMERPLATTE
Q 205	C	339.556.518	Transistor 2 SD 1211 R
Q 206/208	G	339.556.269	Transistor 2 SC 1983
Q 207	A	339.556.342	Transistor 2 SB 644 R
Q 209	B	339.556.239	Transistor 2 SD 639 R
D 231	W*	339.529.190	Diode RD 6,8 EB 1
D 232/234	B	339.529.274	Diode 10 E 2
D 233	U*	339.529.415	Diode HZ 24-3 L
D 235	P*	339.529.230	Diode 1 SS 133
D 236/237	W*	339.529.200	Diode HZ 7 A 1 L
D 238	B	339.529.330	Diode MA 27 T-A
R 298	B	339.509.217	Einsteller
L 251	U*	339.349.215	Spule

Position	Preis-gruppe	Bestell-Nr.	Bezeichnung
BS 4534			PL.F.SERVOLEISTUNGS-TRANS.
Q 11	H	339.556.236	Transistor 2 SD 389 O
	S	339.339.214	Zusatz-Videoplatte
IC 1	S	339.575.030	IC-AN 303
Q 1/2	B	339.556.470	Transistor 2 SC 2021 QR
D 1-4	A	339.529.112	Diode OA 90
R 11	U*	339.509.218	Einsteller
L 1	A	339.349.156	Resonanzspule
L 2	A	339.349.165	Spule
L 3	U*	339.349.216	Spule
BS 4536			FB-EMPFÄNGERPLATTE
IC 1	O	339.575.149	IC-M 50115 AP
Q 1	B	339.556.467	Transistor 2 SD 637 QR
Q 2	D	339.556.562	Transistor 2 SB 822 QR
D 1	W*	339.529.109	Diode MA 150
D 2/3	F	339.529.426	LED SE 303 A
D 4	C	339.529.427	LED BR 3432 S
CF 1	W*	339.369.216	Keramik-Filter
BS 4537			NEUE MECH.STEUERUNGSPLATTE
IC 1	I	339.575.394	IC-M 51014 L
IC 2	P	339.575.393	IC-M 50127 AP
IC 3/4	R	339.575.309	IC-TMS 1025 N 2 LL
IC 5	P	339.575.406	IC-UPD 553 C 185
IC 6	I	339.575.304	IC-UPC 339 C
IC 7-9/ 11-13	I	339.575.347	IC-M 54519 P
IC 10	I	339.575.305	IC-UPD 4050 C
IC 14	F	339.575.397	IC-M 54532 P
Q 1-9	C	339.556.304	Transistor 2 SA 1020 OY
Q 10/11	C	339.556.306	Transistor 2 SC 2655 OY
Q 12/13/22	A	339.556.283	Transistor 2 SB 641 Q
Q 14/15	C	339.556.558	Transistor 2 SC 2877 OY
Q 16/17/20	W*	339.556.314	Transistor 2 SD 637 R
Q 18/19	C	339.556.559	Transistor 2 SC 3070
Q 23	D	339.556.457	Transistor 2 SK 34 C
D 1	G	339.529.210	Photo-Diode PH 302
D 2-15	U*	339.529.035	Diode 1 S 2473
D 16-23	A	339.529.191	Diode WO 3 C
D 24	U*	339.529.420	Diode HZ 9 B 3 L
D 25	U*	339.529.414	Diode HZ 16-2 L
D 26	U*	339.529.419	Diode HZ 7 B-2 L
D 34	W*	339.529.203	Diode HZ 12 C-3 L
RA 1-4	D	339.537.086	Widerstand-Netzwerk
RA 5	D	339.537.083	Widerstand-Netzwerk
RA 6	J	339.537.101	Widerstand-Netzwerk
IB 1	B	339.537.124	Hybrid-Schaltung
IB 2	B	339.537.121	Hybrid-Schaltung
CF 1	F	339.369.011	Keramik-Filter
CF 2	F	339.369.012	Keramik-Filter

Wichtig: Bei Ersatzteilbestellungen bitte **unbedingt** die neunstellige **Bestellnummer** angeben!

N.B.: When demanding Spare Parts it is **absolutely necessary** to quote the nine digit **Part Number** quoted herein!

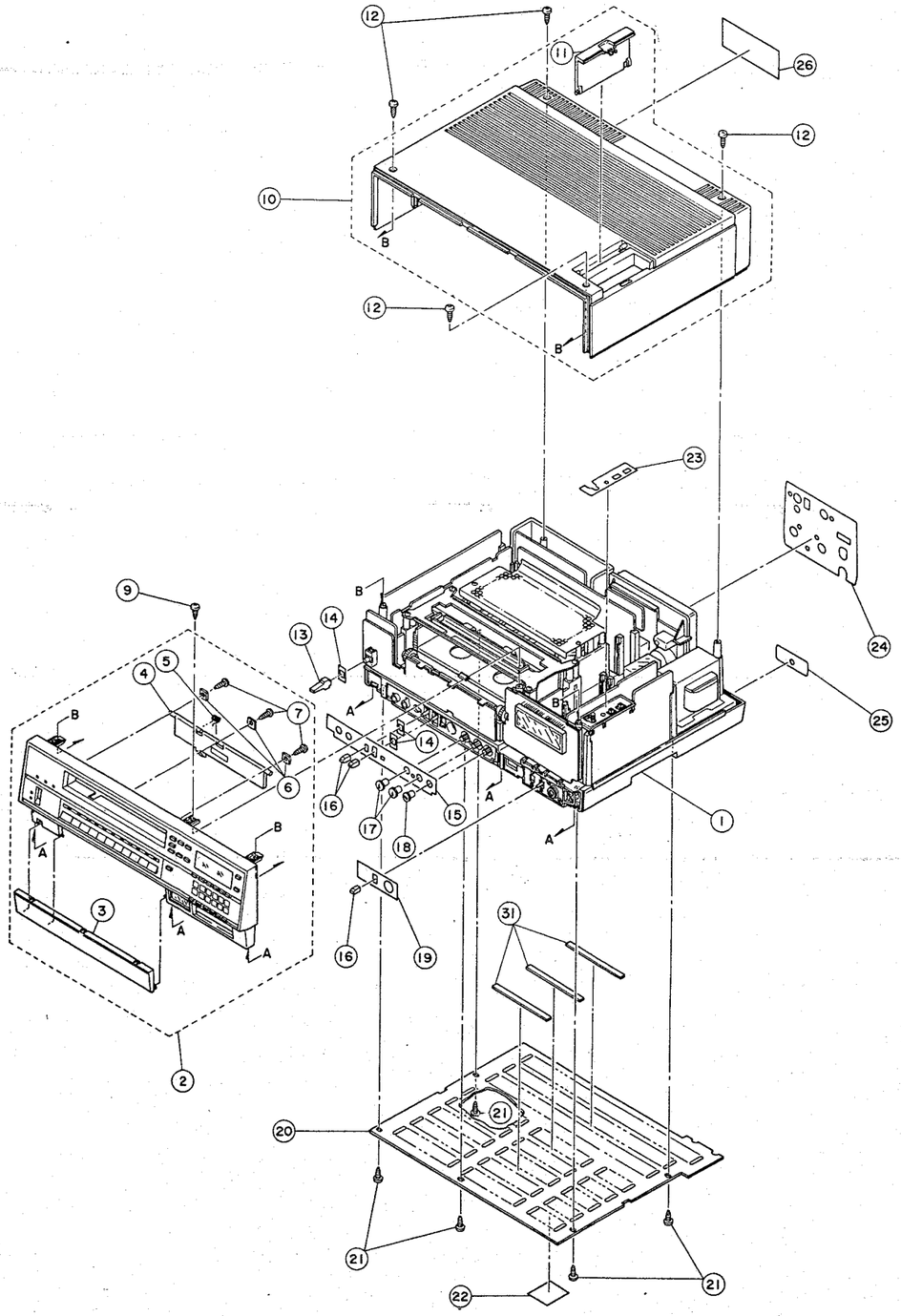
Position	Pr.-Gr.	Bestell-Nr.	Bezeichnung	Item	Description
CF 201	F	339.369.125	Keramik-Filter	ceramic filter	filtre céramique
BPF 401/402	K	339.369.013	Bandpass-Filter	bandpass filter	filtre passe-bande
BPF 403	I	339.369.017	bandpass-Filter	bandpass filter	filtre passe-bande
LPF 401	G	339.369 016	Hochspannungs-Filter	high voltage filter	filtre de haute tension
EQ 201	J	339.339.966	Entzerrer	equalizer	correcteur
X 401	N	339.349.153	Quarz	quartz	quartz
X 402	O	339.349.152	Quarz	quartz	quartz
BS 4510			NETZTEILPLATTE	MAINS UNIT BOARD	BLOC D'ALIMENTATION SECTEUR
Q 1/5/7/8	W*	339.556.315	Transistor 2 SD 637 S	transistor 2 SD 637 S	transistor 2 SD 637 S
Q 3/10		339.556.239	Transistor 2 SD 639 RS	transistor 2 SD 639 RS	transistor 2 SD 639 RS
Q 4	W*	339.556.314	Transistor 2 SD 637 RS	transistor 2 SD 637 RS	transistor 2 SD 637 RS
Q 9	B	339.556.561	Transistor 2 SD 895 DE	transistor 2 SD 895 DE	transistor 2 SD 895 DE
Q 11	C	339.556.306	Transistor 2 SC 2655 OY	transistor 2 SC 2655 OY	transistor 2 SC 2655 OY
DS 1/2	J	339.529.361	Diode D 5 FB 10	diode D 5 FB 10	diode D 5 FB 10
D 5	W*	339.529.203	Diode HZ 12 C 3 L	diode HZ 12 C 3 L	diode HZ 12 C 3 L
D 6/14	W*	339.529.181	Diode 1 S 2076 A	diode 1 S 2076 A	diode 1 S 2076 A
D 7	W*	339.529.200	Diode HZ 7 A 1 L	diode HZ 7 A 1 L	diode HZ 7 A 1 L
D 8	B	339.529.274	Diode 10 E 2	diode 10 E 2	diode 10 E 2
D 9-12	C	339.529.119	Diode VO 3 C	diode VO 3 C	diode VO 3 C
D 13	W*	339.529.203	Diode HZ 12 C 3 L	diode 12 C 3 L	diode 12 C 3 L
R 15	V*	339.509.218	Einstellwiderstand	variable resistor	résistance variable
RY 1	N	339.364.107	Relais	relay	relais
BS 4512			MECH.STEUERUNGSPLATTE	MECH.CIRCUIT BOARD	BLOC DE COMMANDE MECANISME
IC 1	I	339.575.394	IC-M 5 1014 L	IC-M 5 1014 L	IC-M 5 1014 L
IC 2	P	339.575.393	IC-M 50127 AP	IC-M 50127 AP	IC-M 50127 AP
IC 3/4	T	339.575.309	IC-TMS 1025 N 2 LL	IC-TMS 1025 N 2 LL	IC-TMS 1025 N 2 LL
IC 5	Q	339.575.412	IC-UPD 553 C-174	IC-UPD 553 C-174	IC-UPD 553 C-174
IC 6	K	339.575.304	IC-UPC 339 C	IC-UPC 339 C	IC-UPC 339 C
IC 7-9 11-13	I	339.575.347	IC-M 54519 P	IC-M 54519 P	IC-M 54519 P
IC 10	I	339.575.305	IC-UPC 4050 C	IC-UPC 4050 C	IC-UPC 4050 C
IC 14	E	339.575.397	IC-M 54532 P	IC-M 54532 P	IC-M 54532 P
Q 1-9	C	339.556.304	Transistor 2 SA 1020 OY	transistor 2 SA 1020 OY	transistor 2 SA 1020 OY
Q 10/11	C	339.556.306	Transistor 2 SC 2655 OY	transistor 2 SC 2655 OY	transistor 2 SC 2655 OY
Q 12/13 22	A	339.556.282	Transistor 2 SB 641 Q	transistor 2 SB 641 Q	transistor 2 SB 641 Q
Q 14/15	C	339.556.558	Transistor 2 SC 2877 OY	transistor 2 SC 2877 OY	transistor 2 SC 2877 OY
Q 16/17 20/21	W*	339.556.314	Transistor 2 SD 637 R	transistor 2 SD 637 R	transistor 2 SD 637 R
Q 18/19	D	339.556.559	Transistor 2 SC 3070	transistor 2 SC 3070	transistor 2 SC 3070
Q 23	D	339.556.457	Transistor 2 SK 34 C	transistor 2 SK 34 C	transistor 2 SK 34 C
D 1	I	339.529.210	Photo-Diode PH 302	photo diode PH 302	photo diode PH 302
D 2-15/27-30/33 35-38	U*	339.529.035	Diode 1 S 2473	diode 1 S 2473	diode 1 S 2473
D 16-23	A	339.529.191	Diode WO 3 C	diode WO 3 C	diode WO 3 C
D 24	V*	339.529.420	Diode HZ 9 B 3 L	diode HZ 9 B 3 L	diode HZ 9 B 3 L
D 25	V*	339.529.414	Diode HZ 16 2 L	diode HZ 16 2 L	diode HZ 16 2 L
D 26	V*	339.529.419	Diode HZ 7 B 2 L	diode HZ 7 B 2 L	diode HZ 7 B 2 L
D 34	W*	339.529.203	Diode HZ 12 C 3 L	diode HZ 12 C 3 L	diode HZ 12 C 3 L
IB 1	B	339.537.124	Hybrid-Schaltung	inline block	bloc hybride
IB 2	B	339.537.121	Hybrid-Schaltung	inline block	bloc hybride
CF 1	F	339.369.011	Keramik-Filter	ceramic filter	filtre céramique
CF 2	F	339.369.012	Keramik-Filter	ceramic filter	filtre céramique
BS 4513			TASTENPLATTE	OPERATION CIRCUIT BOARD	BLOC DE TOUCHES
IC 1	Q	339.575.149	IC-M 50115 AP	IC-M 50115 AP	IC-M 50115 AP
Q 1	A	339.556.286	Transistor 2 CD 636 QR	transistor 2 CD 636 QR	transistor 2 CD 636 QR
D 1	A	339.529.108	Diode 1 S 2473 HJ	diode 1 S 2473 HJ	diode 1 S 2473 HJ
D 2	U*	339.529.419	Diode HZ 7 B 2 L	diode HZ 7 B 2 L	diode HZ 7 B 2 L
D 3	U*	339.529.418	Diode HZ 6 C 2 L	diode HZ 6 C 2 L	diode HZ 6 C 2 L
D 4/5/6	U*	339.529.035	Diode 1 S 2473	diode 1 S 2473	diode 1 S 2473
D 7/8/9	A	339.529.191	Diode WO 3 C	diode WO 3 C	diode WO 3 C
D 11/13	B	339.529.423	LED SLR 34 MT 5	LED SLR 34 MT 5	LED SLR 34 MT 5
D 12/14-26	C	339.529.359	LED GL 3 HD 5	LED GL 3 HD 5	LED GL 3 HD 5

Position	Pr.-Gr.	Bestell-Nr.	Bezeichnung	Item	Description
CF 1	F	339.369.018	Keramik-Filter	ceramic filter	filtre céramique
S 1	G	339.444.110	Hebelschalter	lever switch	commutateur à levier
S 2	B	339.444.116	Taktschalter	tact switch	commutateur à cadence
BS 4540			SERVOPLATTE	SERVO BOARD	BLOC SERVO
IC 1	G	339.575.075	IC-AN 360	IC-AN 360	IC-AN 360
IC 2	F	339.575.188	IC-TC 4069 BP	IC-TC 4069 BP	IC-TC 4069 BP
IC 3	G	339.575.401	IC-TC 4027 BP	IC-TC 4027 BP	IC-TC 4027 BP
IC 4	F	339.575.184	IC-TC 4011 BP	IC-TC 4011 BP	IC-TC 4011 BP
IC 5	L	339.575.386	IC-AN 6345	IC-AN 6345	IC-AN 6345
IC 6/10	N	339.575.133	IC-AN 6341 N	IC-AN 6341 N	IC-AN 6341 N
IC 7/12	I	339.575.245	IC-TC 4066 BP	IC-TC 4066 BP	IC-TC 4066 BP
IC 9		339.575.261	IC-AN 6342 N	IC-AN 6342 N	IC-AN 6342 N
IC 11	Q	339.575.387	IC-AN 6350	IC-AN 6350	IC-AN 6350
IC 8/13/14	I	339.575.042	IC-UPC 1458 C	IC-UPC 1458 C	IC-UPC 1458 C
IC 15	M	339.575.199	IC-DN 850	IC-DN 850	IC-DN 850
IC 16	Q	339.575.407	IC-UPD 553 C-177	IC-UPD 553 C-177	IC-UPD 553 C-177
IC 17	R	339.575.383	IC-HA 13008	IC-HA 13008	IC-HA 13008
IC 18	H	339.575.136	IC-BA 222 V	IC-BA 222 V	IC-BA 222 V
IC 19/21	G	339.575.120	IC-UPC 4558 C	IC-UPC 4558 C	IC-UPC 4558 C
IC 20	K	339.575.304	IC-UPC 339 C	IC-UPC 339 C	IC-UPC 339 C
IC 22/23/24	I	339.575.347	IC-M 54519 P	IC-M 54519 P	IC-M 54519 P
Q 1/4/6 10/20-30 33-36/38-40	U*	339.556.327	Transistor 2 SD 636 RS	transistor 2 SD 636 RS	transistor 2 SD 636 RS
Q 2/3/5/7 8/9/12-15 32/37	C	339.556.232	Transistor 2 SB 643 RS	transistor 2 SB 643 RS	transistor 2 SB 643 RS
Q 16-19	B	339.556.306	Transistor 2 SC 2655 OY	transistor 2 SC 2655 OY	transistor 2 SC 2655 OY
D 1-8/10-14/16-30	U*	339.529.035	Diode 1 S 2473	diode 1 S 2473	diode 1 S 2473
D 9	A	339.529.413	Diode AW 08-16	diode AW 08-16	diode AW 08-16
D 15	V*	339.529.416	Diode HZ 6 A 1 L	diode HZ 6 A 1 L	diode HZ 6 A 1 L
D 31-33	V*	339.529.191	Diode WO 3 C	diode WO 3 C	diode WO 3 C
R 23/160	A	339.509.207	Einsteller	variable resistor	résistance variable
R 24	U*	339.509.219	Einsteller	variable resistor	résistance variable
R 31/94 126	F	339.509.009	Einsteller	variable resistor	résistance variable
R 54	B	339.509.953	Einsteller	variable resistor	résistance variable
R 128	F	339.509.010	Einsteller	variable resistor	résistance variable
R 136	E	339.509.208	Einsteller	variable resistor	résistance variable
R 164/218	C	339.502.216	Einsteller	variable resistor	résistance variable
R 212	A	339.509.209	Einsteller	variable resistor	résistance variable
R 233	C	339.509.210	Einsteller	variable resistor	résistance variable
IB 1	B	339.537.125	Hybrid-Schaltung	inline block	bloc hybride
IB 2	B	339.537.122	Hybrid-Schaltung	inline block	bloc hybride
IB 3	B	339.537.123	Hybrid-Schaltung	inline block	bloc hybride
IB 4	B	339.537.126	Hybrid-Schaltung	inline block	bloc hybride
LPF 1	F	339.369.207	LPF-Filter	LPF filter	filtre LPF
CF 1	E	339.369.011	Keramik-Filter	ceramic filter	filtre céramique
X'tal 1	O	339.349.152	Quarz	quartz	quartz
SW 1	C	339.444.124	Schiebeschalter	slide switch	commutateur curseur
SW 2	D	339.444.208	Schiebeschalter	slide switch	commutateur curseur
SW 3	B	339.444.210	Schiebeschalter	slide switch	commutateur curseur
	D	339.540.206	Kopfhörerbuchse	headphone socket	prise casque
	E	339.540.207	Buchse	socket	prise
BS 4515			Y-UND VORVERSTÄRKERPLATTE	Y-AND PRE-AMPLIFIER BOARD	BLOC PREAMPLI ET Y
IC 204	V	339.575.300	IC-HA 11738	IC-HA 11738	IC-HA 11738
IC 205	V	339.575.299	IC-HA 11724	IC-HA 11724	IC-HA 11724
Q 211/213 214/215/217/219/220/222/224/230		339.556.470	Transistor 2 SC 2021 QRS	transistor 2 SC 2021 QRS	transistor 2 SC 2021 QRS
Q 212/216 218	B	339.556.468	Transistor 2 SC 2021 Q	transistor 2 SC 2021 Q	transistor 2 SC 2021 Q
Q 221/223	A	339.556.308	Transistor 2 SB 745 S	transistor 2 SB 745 S	transistor 2 SB 745 S
Q 228	A	339.556.307	Transistor 2 SA 874 QR	transistor 2 SA 874 QR	transistor 2 SA 874 QR
Q 229	A	339.556.337	Transistor 2 SC 1652 QR	transistor 2 SC 1652 QR	transistor 2 SC 1652 QR

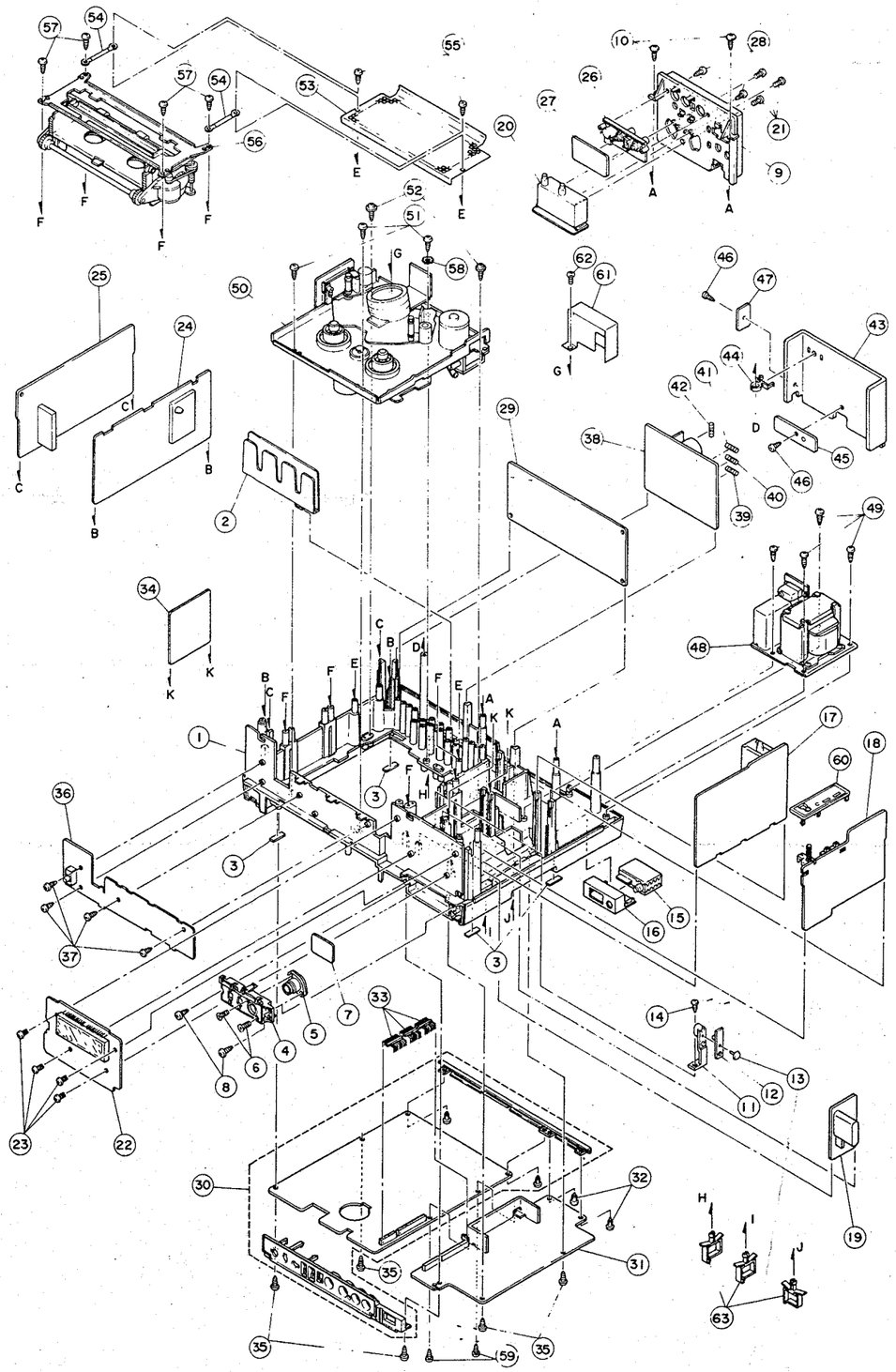
Position	Pr.-Gr.	Bestell-Nr.	Bezeichnung	Item	Description
D 210-213 215/216	W*	339.529.109	Diode MA 150	diode MA 150	diode MA 150
D 214/218	A	339.529.193	Diode RD 3,6 EB	diode RD 3,6 EB	diode RD 3,6 EB
D 217	B	339.529.360	Diode MA 27 TB	diode MA 27 TB	diode MA 27 TB
R 257/297 311/337	R*	339.509.211	Einstellwiderstand	variable resistor	résistance variable
R 292/344 379	R*	339.509.218	Einstellwiderstand	variable resistor	résistance variable
R 318	R*	339.509.212	Einstellwiderstand	variable resistor	résistance variable
R 360	R*	339.509.213	Einstellwiderstand	variable resistor	résistance variable
L 205	V*	339.349.207	Spule	coil	bobine
L 206/209 213/218/ 219/220 224/227/ 230	A	339.349.156	Spule	coil	bobine
L 207/210	A	339.349.168	Spule	coil	bobine
L 208	A	339.349.208	Spule	coil	bobine
L 211	A	339.349.167	Spule	coil	bobine
L 212	U*	339.349.209	Spule	coil	bobine
L 214	A	339.349.165	Spule	coil	bobine
L 215	V*	339.349.210	Spule	coil	bobine
L 216	B	339.349.026	Spule	coil	bobine
L 217	U*	339.349.211	Spule	coil	bobine
L 221/228	A	339.349.171	Spule	coil	bobine
L 222/223	A	339.349.175	Spule	coil	bobine
L 225	A	339.349.170	Spule	coil	bobine
L 226	V*	339.349.212	Spule	coil	bobine
L 229	A	339.349.161	Spule	coil	bobine
DL 201	R	339.489.115	Verzögerungsleitung	delay line	ligne de retard
LPF 201	I	339.369.014	Tiefpassfilter	low pass filter	filtre passe-bas
LPF 202	H	339.369.128	Tiefpassfilter	low pass filter	filtre passe-bas
EQ 202	I	339.339.020	Entzerrer	equalizer	correcteur
BS 4518			AUDIO-PLATTE	AUDIO CIRCUIT BOARD	BLOC AUDIO
IC 1	I	339.575.081	IC-UPD 4066 C	IC-UPD 4066 C	IC-UPD 4066 C
IC 2	M	339.575.146	IC-HA 12005	IC-HA 12005	IC-HA 12005
IC 3	A	339.575.400	IC-TA 7629 P	IC-TA 7629 P	IC-TA 7629 P
IC 4	H	339.575.152	IC-NJM 4560 D	IC-NJM 4560 D	IC-NJM 4560 D
IC 5	H	339.575.086	IC-BA 222	IC-BA 222	IC-BA 222
Q 1/3/5/7 10/11/12	U*	339.556.327	Transistor 2 SD 636 RS	transistor 2 SD 636 RS	transistor 2 SD 636 RS
Q 2/19	A	339.556.320	Transistor 2 SB 641 RS	transistor 2 SB 641 RS	transistor 2 SB 641 RS
Q 4	V*	339.556.475	Transistor 2 SD 661 S	transistor 2 SD 661 S	transistor 2 SD 661 S
Q 6	A	339.556.323	Transistor 2 SB 788 TU	transistor 2 SB 788 TU	transistor 2 SB 788 TU
Q 8/9	A	339.556.332	Transistor 2 SD 958 TU	transistor 2 SD 958 TU	transistor 2 SD 958 TU
Q 13/14	A	339.556.321	Transistor 2 SB 644 RS	transistor 2 SB 644 RS	transistor 2 SB 644 RS
Q 15	B	339.556.239	Transistor 2 SD 639 RS	transistor 2 SD 639 RS	transistor 2 SD 639 RS
Q 16	C	339.556.304	Transistor 2 SA 1020 OY	transistor 2 SA 1020 OY	transistor 2 SA 1020 OY
Q 17/18	B	339.556.246	Transistor 2 SD 639 S	transistor 2 SD 639 S	transistor 2 SD 639 S
D 1-3/7/8 11-13	W*	339.529.109	Diode MA 150	diode MA 150	diode MA 150
D 4/5	B	339.529.336	Diode RD 6,8 EB 2	diode RD 6,8 EB 2	diode RD 6,8 EB 2
D 6/14	B	339.529.274	Diode 10 E 2	diode 10 E 2	diode 10 E 2
D 9	W*	339.529.192	Diode HZ 15-3	diode HZ 15-3	diode HZ 15-3
D 10	W*	339.529.421	Diode RD 3,9 EB 2	diode RD 3,9 EB 2	diode RD 3,9 EB 2
R 70	V*	339.509.214	Einstellwiderstand	variable resistor	résistance variable
R 93/95	V*	339.509.215	Einstellwiderstand	variable resistor	résistance variable
R 125	V*	339.509.216	Einstellwiderstand	variable resistor	résistance variable
L 1	H	339.369.208	LP-Filter	LP-filter	filtre LP
L 2	F	339.349.988	Spule	coil	bobine
L 3	V*	339.349.213	Spule	coil	bobine
L 4	V*	339.349.214	Spule	coil	bobine
L 5	A	339.349.032	Spule	coil	bobine
T 1	J	339.369.954	Filter	filter	filtre
RY 1	M	339.364.108	Relais	relay	relais
BS 4519			PLATTE F.LEISTUNGS-TRANS.	BOARD F.POWER TRANSISTOR	PLAQUE P.TRANSISTOR DE PUISSANCE
Q 2/6	J	339.556.310	Transistor 2 SC 2484 P	transistor 2 SC 2484 P	transistor 2 SC 2484 P
BS 4520			PLATTE F.SPULENTELLER FG	REEL FG CIRCUIT BOARD	PLAQUE P.PLATEAU DE DEBOBINAGE
P 101	G	339.274.206	Lichtschranke	photo interrupter	barrière lumineuse
BS 4521			PLATTE F.AUFWICKEL-SPULENTEL.	TAKE-UP REEL FG CIRC.BOARD	PLAQUE P.PLATEAU DE BOBINAGE
P 102	G	339.274.206	Lichtschranke	photo interrupter	barrière lumineuse

Position	Pr.-Gr.	Bestell-Nr.	Bezeichnung	Item	Description
BS 4526			PLATTE F.AUFNAHME-WAHLSCHALT.	REC.SELECT SWITCH CIRC.BOARD	PLAQUE P.SELECT.D'ENREGISTREMENT
	E	339.444.209	Schiebeschalter	slide switch	commutateur curseur
BS 4528			PLATTE F.CASSETTEN-LICHTSCHR.	CASSETTE PHOTO INTERRUPTER	PLAQUE P.BARRIERE LUM.DE CASSETTE
P 103	G	339.274.206	Lichtschranke	photo interrupter	barrière lumineuse
BS 4530			HILFSPLATTE F.TUNER/TIMER	TUNER/TIMER SUB CIRC.BOARD	PLAQUE SUPPL.P.TUNER/TIMER
Q 205	C	339.556.518	Transistor 2 SD 1211 R	transistor 2 SD 1211 R	transistor 2 SD 1211 R
Q 206/208	G	339.556.269	Transistor 2 SC 1983	transistor 2 SC 1983	transistor 2 SC 1983
Q 207	A	339.556.342	Transistor 2 SB 644 R	transistor 2 SB 644 R	transistor 2 SB 644 R
Q 209	B	339.556.239	Transistor 2 SD 639 R	transistor 2 SD 639 R	transistor 2 SD 639 R
D 231	W*	339.529.190	Diode RD 6,8 EB 1	diode RD 6,8 EB 1	diode RD 6,8 EB 1
D 232/234	B	339.529.274	Diode 10 E 2	diode 10 E 2	diode 10 E 2
D 233	U*	339.529.415	Diode HZ 24-3 L	diode HZ 24-3 L	diode HZ 24-3 L
L 235	P*	339.529.230	Diode 1 SS 133	diode 1 SS 133	diode 1 SS 133
D 236/237	W*	339.529.200	Diode HZ 7 A-1 L	diode HZ 7 A-1 L	diode HZ 7 A-1 L
D 238	B	339.529.330	Diode MA 27 T-A	diode MA 27 T-A	diode MA 27 T-A
R 298	B	339.509.217	Einstellwiderstand	variable resistor	résistance variable
T 201	A	339.342.207	Drosselspule	choke coil	bobine self
L 251	U*	339.349.215	Spule	coil	bobine
BS 4532			ANTENNENVERSTÄRKERPLATTE	MIX BOOSTER CIRC.BOARD	PLAQUE D'AMPLI ANTENNE
BS 4534			PLATTE F.SERVO-TRANSISTOREN	SERVO POWER TRANSISTOR	PLAQUE P.TRANSIST.DE PUISS.SERVO
Q 11	H	339.556.236	Transistor 2 SD 3890	transistor 2 SD 3890	transistor 2 SD 3890
BS 4535			HILFSPLATTE F.VIDEO	VIDEO SUB CIRCUIT BOARD	PLAQUE SUPPL.VIDEO
IC 1	S	339.575.030	IC-AN 303	IC-AN 303	IC-AN 303
Q 1/2	B	339.556.470	Transistor 2 SC 2021 QR	transistor 2 SC 2021 QR	transistor 2 SC 2021 QR
D 1-4	A	339.529.112	Diode OA 90	diode OA 90	diode OA 90
R 11	V*	339.509.218	Einstellwiderstand	variable resistor	résistance variable
L 1	A	339.349.156	Resonanzspule	peaking coil	bobine d'accord
L 2	A	339.349.165	Resonanzspule	peaking coil	bobine d'accord
L 3	U*	339.349.216	Resonanzspule	peaking coil	bobine d'accord
BS 4536			IR-EMPFÄNGERPLATTE	REMOTE CONTR.CIRC.BOARD	BLOC RECEPTEUR A INFRAROUGE
IC 1	Q	339.575.149	IC-M 50115 AP	IC-M 50115 AP	IC-M 50115 AP
Q 1	B	339.556.467	Transistor 2 SD 637 QR	transistor 2 SD 637 QR	transistor 2 SD 637 QR
Q 2	D	339.556.562	Transistor 2 SB 822 QR	transistor 2 SB 822 QR	transistor 2 SB 822 QR
D 1	W*	339.529.109	Diode MA 150	diode MA 150	diode MA 150
D 2/3	F	339.529.426	LED SE 303 A	LED SE 303 A	LED SE 303 A
D 4	C	339.529.427	LED BR 3432 S	LED BR 3432 S	LED BR 3432 S
CF 1	W*	339.369.216	Keramik-Filter	ceramic filter	filtre céramique
BS 4537			MECH.-STEUERUNGSPLATTE (NEU)	MECH.CIRCUIT BOARD(NEW)	BLOC DE COMMANDE DU MEC.(RECENT)
IC 1	I	339.575.394	IC-M 51014 L	IC-M 51014 L	IC-M 51014 L
IC 2	P	339.575.393	IC-M 50127 AP	IC-M 50127 AP	IC-M 50127 AP
IC 3/4	T	339.575.309	IC-TMS 1025 N 2 LL	IC-TMS 1025 N 2 LL	IC-TMS 1025 N 2 LL
IC 5	P	339.575.406	IC-UPD 553 C-185	IC-UPD 553 C-185	IC-UPD 553 C-185
IC 6	K	339.575.304	IC-UPC 339 C	IC-UPC 339 C	IC-UPC 339 C
IC 7-9 11-13	I	339.575.347	IC-M 54519 P	IC-M 54519 P	IC-M 54519 P
IC 10	I	339.575.305	IC-UPD 4050 C	IC-UPD 4050 C	IC-UPD 4050 C
IC 14	F	339.575.397	IC-M 54532 P	IC-M 54532 P	IC-M 54532 P
Q 1-9	C	339.556.304	Transistor 2 SA 1020 OY	transistor 2 SA 1020 OY	transistor 2 SA 1020 OY
Q 10/11	C	339.556.306	Transistor 2 SC 2655 OY	transistor 2 SC 2655 OY	transistor 2 SC 2655 OY
Q 12/13/22	A	339.556.283	Transistor 2 SB 641 Q	transistor 2 SB 641 Q	transistor 2 SB 641 Q
Q 14/15	C	339.556.558	Transistor 2 SC 2877 OY	transistor 2 SC 2877 OY	transistor 2 SC 2877 OY
Q 16/17/20	W*	339.556.314	Transistor 2 SD 637 R	transistor 2 SD 637 R	transistor 2 SD 637 R
Q 18/19	C	339.556.559	Transistor 2 SC 3070	transistor 2 SC 3070	transistor 2 SC 3070
Q 23	D	339.556.457	Transistor 2 SK 34 C	transistor 2 SK 34 C	transistor 2 SK 34 C
D 1	H	339.529.210	Photo-Diode PH 302	photo diode PH 302	photo diode PH 302
D 2-15 28-30/33 36-38	U*	339.529.035	Diode 1 S 2473	diode 1 S 2473	diode 1 S 2473
D 16-23	A	339.529.191	Diode WO 3 C	diode WO 3 C	diode WO 3 C
D 24	V*	339.529.420	Diode HZ 9 B 3 L	diode HZ 9 B 3 L	diode HZ 9 B 3 L
D 25	V*	339.529.414	Diode HZ 16-2 L	diode HZ 16-2 L	diode HZ 16-2 L
D 26	V*	339.529.419	Diode HZ 7 B-2 L	diode HZ 7 B-2 L	diode HZ 7 B-2 L
D 34	W*	339.529.203	Diode HZ 12 C-3 L	diode HZ 12 C-3 L	diode HZ 12 C-3 L
IB 1	B	339.537.124	Hybrid-Schaltung	inline block	bloc hybride
IB 2	B	339.537.121	Hybrid-Schaltung	inline block	bloc hybride
CF 1	F	339.369.011	Keramik-Filter	ceramic filter	filtre céramique
CF 2	F	339.369.012	Keramik-Filter	ceramic filter	filtre céramique

Gehäuseteile BS-4401



Chassis-Teile BS-4402

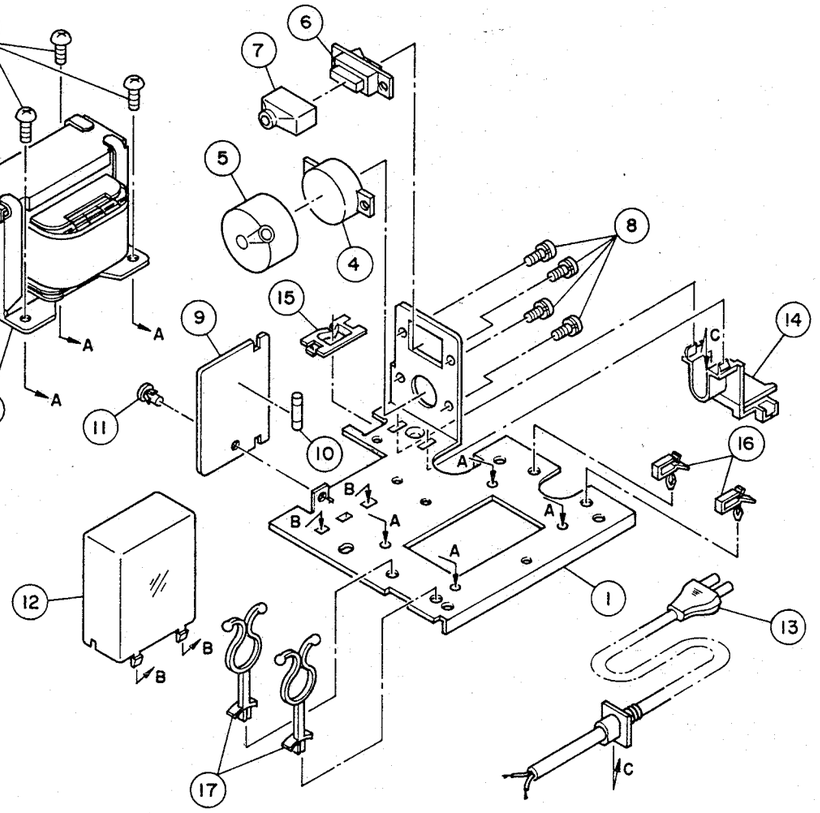


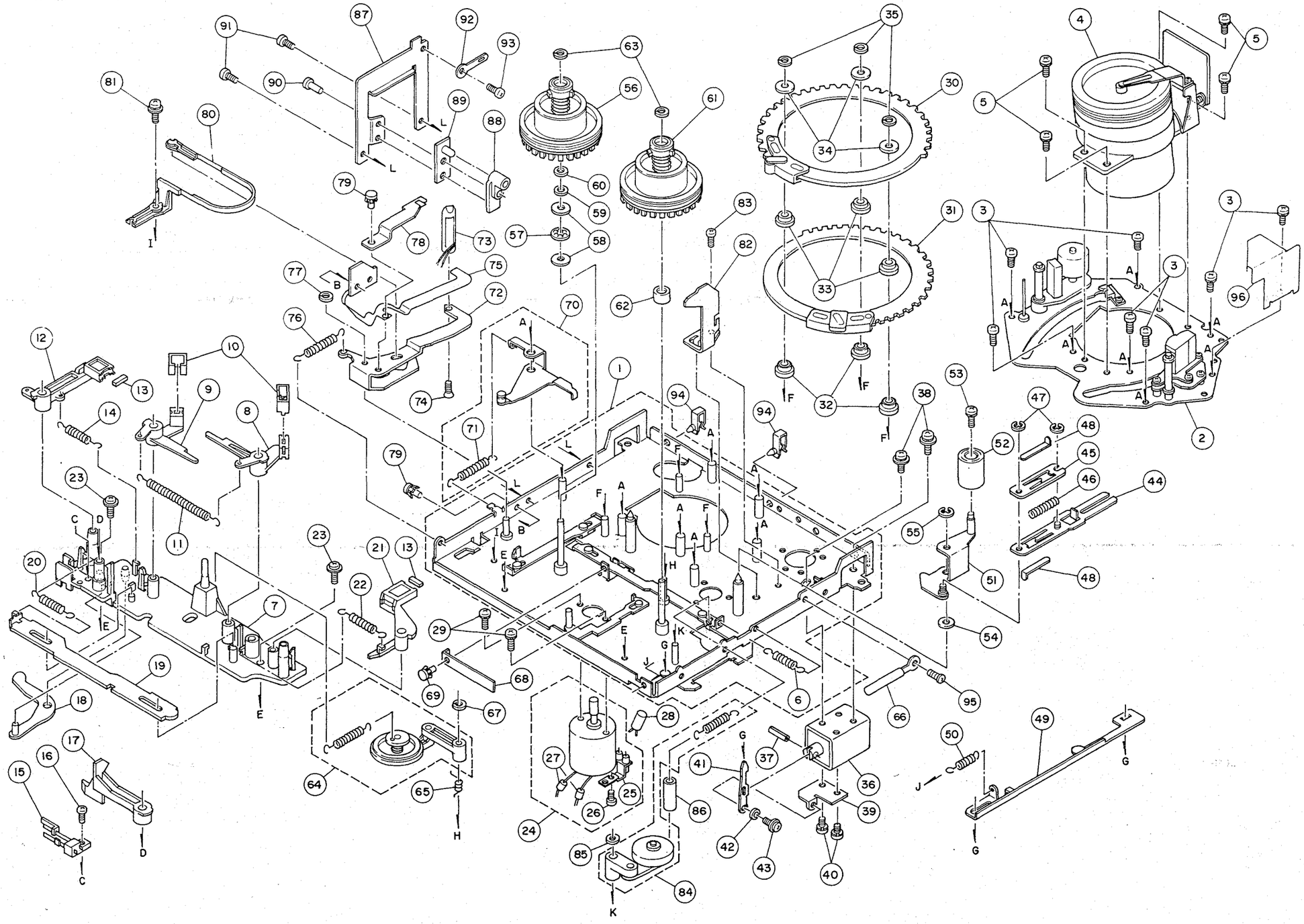
Wichtig: Bei Ersatzteilbestellungen bitte **unbedingt** die neunstellige **Bestellnummer** angeben!

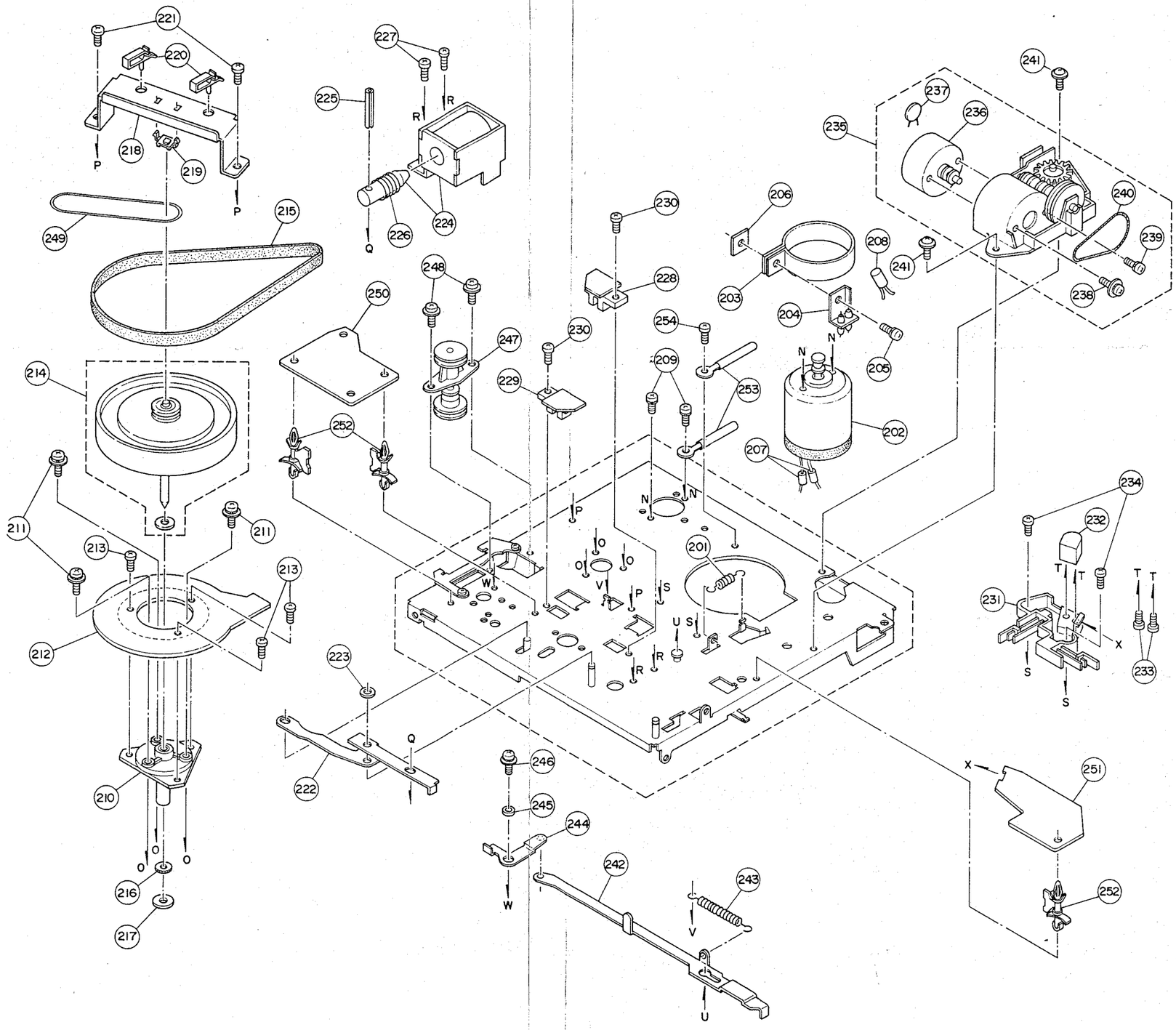
N.B.: When demanding Spare Parts it is **absolutely necessary** to quote the nine digit **Part Number** quoted herein!

Important: Lors d'une commande de pièces de rechange, prière **en tout cas** d'indiquer le **numéro de la pièce** à 9 chiffres!

Netztrafo-Einheit BS-4403






221
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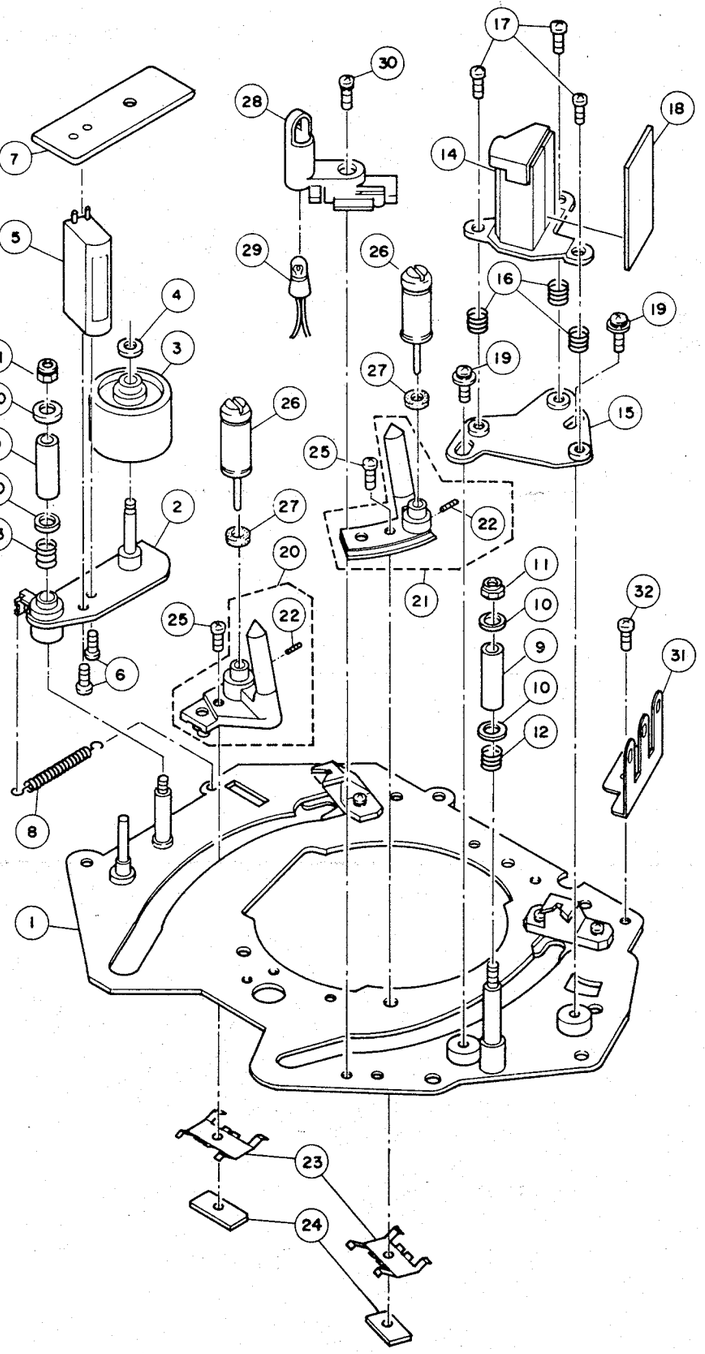
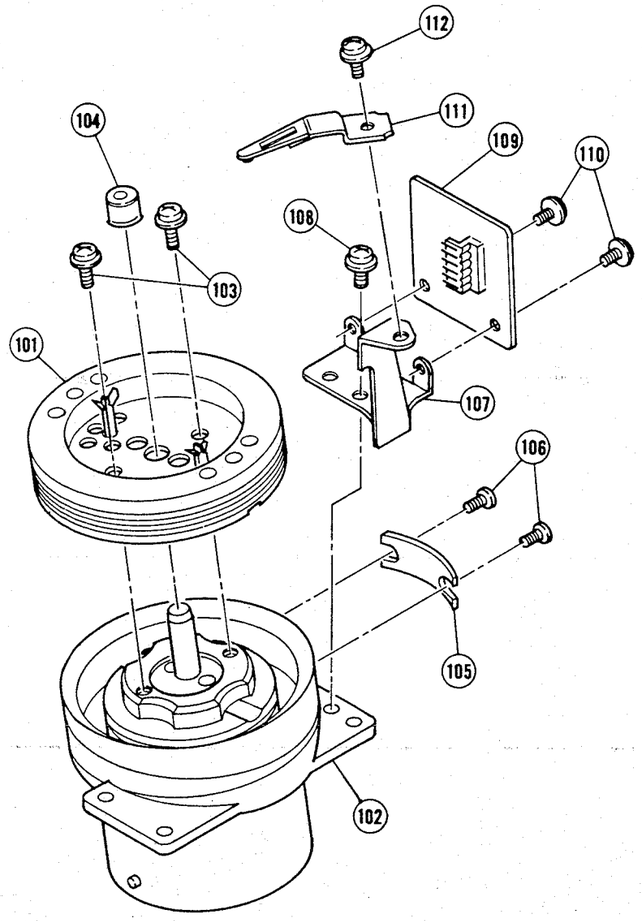
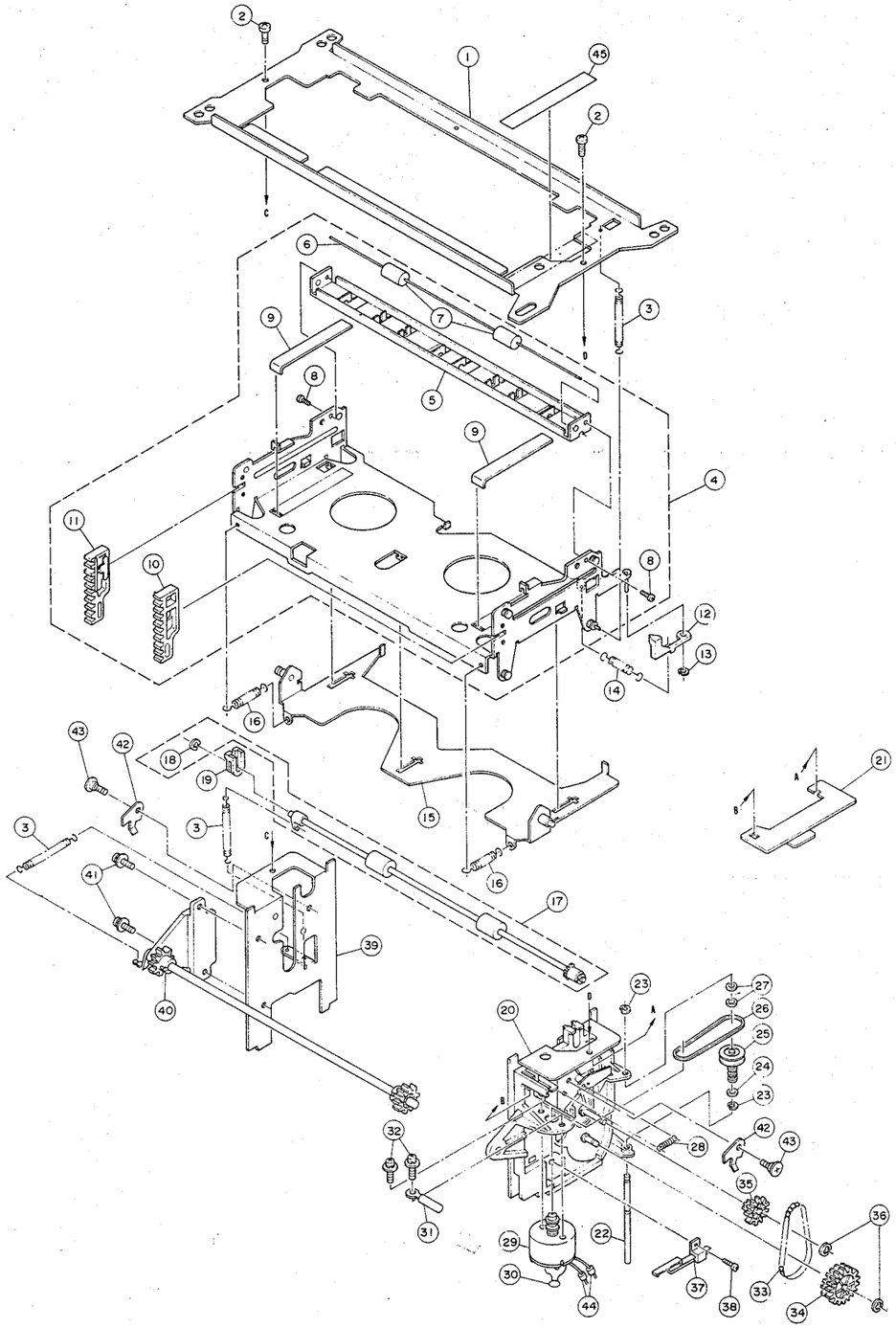
Zwischendeck-mechan. Teile BS-4406



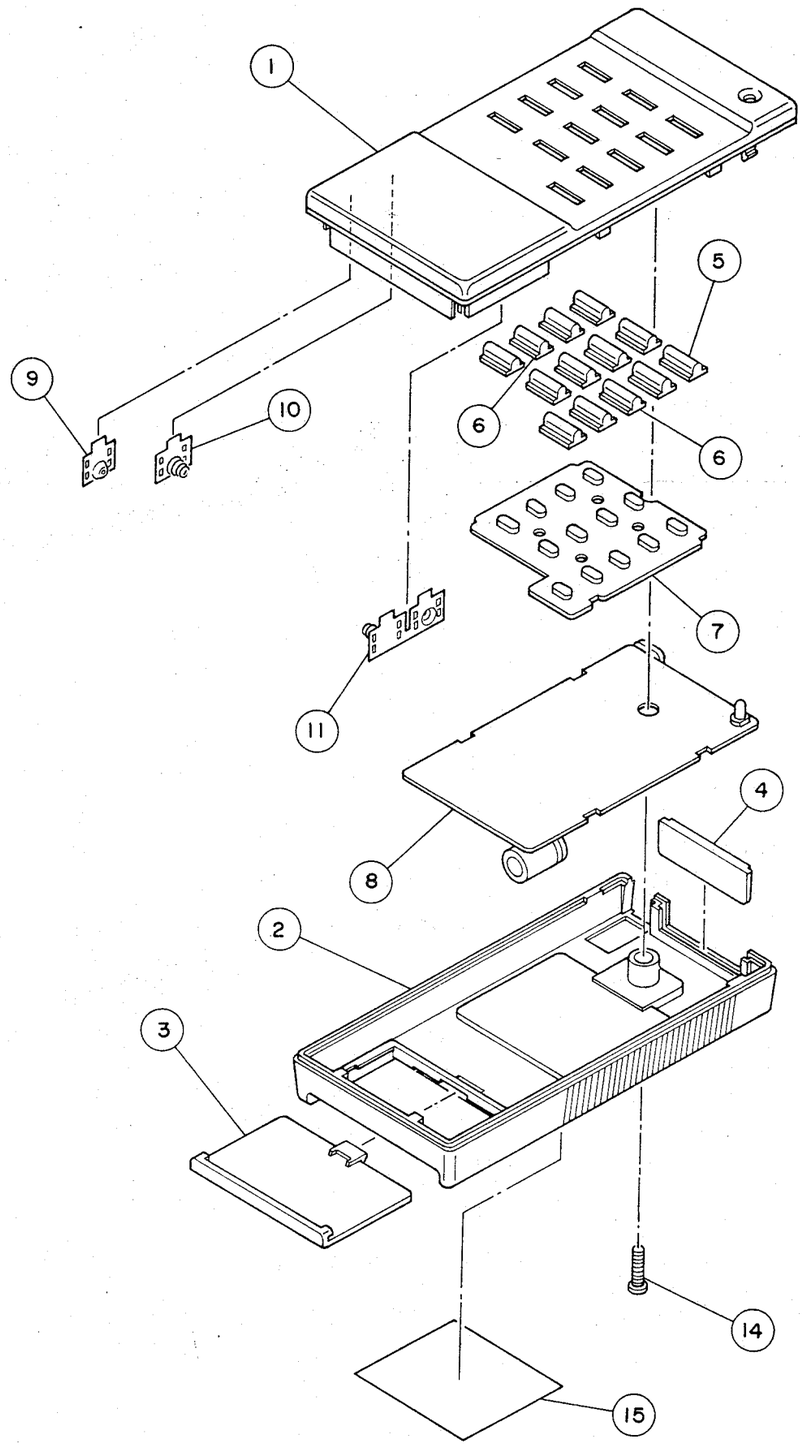
Kopftrommel-Einheit BS-4407



Cassetten-Aufnahme BS-4408



Fernbedienungs-Einheit BS-4409



Ersatzteile VR 530 · Spare Parts VR 530 · Pièces de rechange VR 530

Position	Pr.-Gr.	Bestell-Nr.	Bezeichnung	Item	Description
BS 4401			GEHÄUSETEILE	CABINET PARTS	PIECES DU BOITIER
2	U	339.124.210	Gehäuse-Vorderteil	cabinet front part	boîtier,partie AV
3	E	339.174.212	Klappe	flap	clapet
4	D	339.174.208	Kassettenfachklappe	cassette housing flap	clapet compart.cassette
5	N*	339.904.207	Feder	spring	ressort
6	N*	339.169.206	Stopper	stopper	butée
10	S	339.124.209	Gehäuse-Oberteil	cabinet front part	boîtier,partie supér.
11	F	339.174.215	Kappe	cap	capuchon
13	N*	339.224.209	Knopf	knob	bouton
14	N*	339.174.209	Abdeckung	cover	cache
15	C	339.174.216	Abdeckplatte A	control plate A	plaque de recouvrement A
16	N*	339.224.206	Knopf	knob	bouton
17	R*	339.224.208	Knopf	knob	bouton
18	R*	339.224.207	Knopf	knob	bouton
19	A	339.174.217	Abdeckplatte B	control plate B	plaque de recouvrement B
20	I	339.155.206	Bodenplatte	bottom plate	plaque de fond
BS 4402			CHASSISTEILE	CHASSIS PARTS	PIECES DU CHASSIS
3	B	339.064.110	Fuß	foot	pied
4	A	339.234.208	Halter (2)	holder (2)	support (2)
5	C	339.540.208	Kamerabuchse	camera socket	prise de caméra
13	R*	339.874.116	Stopper	stopper	butée
15	Z	339.339.184	HF-Modulator	RF-converter	modulateur HF
16	W*	339.139.206	HF-Modulatoraufnahme	RF converter case	boîte de modulateur HF
26	A	339.234.207	Halter (2)	holder (2)	support (2)
39	R*	339.570.009	Sicherung 1,0 A	fuse 1,0 A	fusible 1,0 A
40/41	G	339.570.068	Sicherung 2,5 A	fuse 2,5 A	fusible 2,5 A
42	G	339.570.071	Sicherung 1,25 A	fuse 1,25 A	fusible 1,25 A
60	W*	339.174.214	Einsteller-Abdeckung	control cover	masque de contrôles
BS 4403			NETZTRAFO-EINHEIT	POWER TRANSFORMER	BLOC TRANSFO D'ALIMENTATION SECT.
2	Y	339.314.206	Netztrafo	power transformer	transfo d'alimentation secteur
4	K	339.414.106	Spannungswähler-Adapter	voltage selector	adaptateur p.sélecteur de tension
5	C	339.414.109	Spannungswähler-Abdeckung	voltage selector cover	cache p.sélecteur de tension
6	J	339.414.117	Wippschalter	toggle switch	interrupteur à bascule
7	V*	339.234.111	Abdeckung f.Wippschalter	cover f.toggle switch	cache p.interrupteur bascule
10	G	339.570.071	Sicherung 1,25 A	fuse 1,25 A	fusible 1,25 A
13	M	339.484.206	Netzleitung	power cord	câble secteur
BS 4404			MECHANISCHES OBERTEIL	MAIN DECK ASSY.	MECANISME,PARTIE SUPERIEURE
6	N*	339.904.126	Feder	spring	ressort
7	H	339.749.122	Bremsgrundplatte	mould base	plaque de frein
8	R*	339.749.121	Hauptaufwickelbremse	take-up main brake	frein p.bobinage princip.
9	R*	339.749.119	Hauptabwickelbremse	supply main brake	frein p.débobinage princip.
10	R*	339.749.123	Bremsschuh	brake shoe	sabot de frein
11	W*	339.904.128	Feder	spring	ressort
12	C	339.749.120	Einfädelungsbremse	loading tension brake	frein d'enfilement
13	T*	339.854.113	Dämpfungsauflage	pad	appui amortisseur
14	C	339.904.129	Feder	spring	ressort
15		339.444.113	Mikroschalter	micro switch	microcommutateur
17	V*	339.729.118	Aufnahme-Sicherungshebel	record safety arm	levier de blocage d'enregistrement
18	R*	339.829.213	Freigabehebel	change lever	levier de débobinage
19	R*	339.829.214	Betätigungshebel	connect lever	levier de manoeuvre
20	R*	339.904.212	Feder	spring	ressort
21	R*	339.749.206	Aufwickelzugbremse	take-up back tension brake	frein de traction de bobinage
22	C	339.904:129	Feder	spring	ressort
24	Y	339.304.109	Wickelmotor	reel motor assy.	moteur d'enroulement
28	B	339.580.118	Elko	Elko	Elko
30	I	339.749.016	Abwickeleinfädelung	supply loading ring assy.	enfilement de débobinage
31	H	339.749.118	Aufwickeleinfädelung	take-up loading ring assy.	enfilement de bobinage
36	P	339.344.207	Andruckrollenmagnet	pinch roller magnet	aimant de galet presseur
37	N*	339.874.208	Federstift	spring pin	goupille élastique
41	A	339.829.207	Betätigungshebel	connect lever	levier de manoeuvre
44	A	339.874.211	Halteplatte f.Feder	spring holder plate	plaquette de support de ressort
45	N*	339.874.212	Federhalter	spring holder	support de ressort
46	N*	339.904.209	Feder	spring	ressort
49	R*	339.829.209	Betätigungshebel	connect lever	levier de manoeuvre
50	R*	339.904.210	Feder	spring	ressort
51	B	339.754.206	Haltearm f.GA-Rolle	pinch roller arm assy.	bras de support p.GP
52	O	339.759 108	GA-Rolle,kpl.	pinch roller assy.	galet presseur,cpl.
56	H	339.744.009	ABW-Tellereinheit	supply reel disc assy.	bloc plateau débiteur
57	A	339.729.122	Drucklager	thrust bearing assy.	palier de butée
61	H	339.744.010	Aufwickeltellereinheit	take-up reel disc assy.	bloc plateau enrouleur
64	H	339.764.107	Wickelzwischenrad	reel idler assy.	roue intermèdiaire de bobinage
65	V*	339.904.132	Feder	spring	ressort
70	C	339.829.206	Freigabehebel	cancel lever	levier de déverrouillage
71	W*	339.904.133	Feder	spring	ressort

Position	Pr.-Gr.	Bestell-Nr.	Bezeichnung	Item	Description
72	T	339.829.138	Spannarm	tension arm	bras de serrage
76	N*	339.904.211	Feder	spring	ressort
78	R*	339.169.208	Stopper	stopper	butée
79	R*	339.935.207	Plastik-Niet	plastic rivet	rivet en plastique
80	G	339.749.117	Bremsrad	tension band assy.	roue de frein
84	G	339.769.109	Aufwickel-Zwischenrad	take-up idler assy.	roue intermédiaire de bobinage
87	U*	339.874.210	Endsensorhalter	end-sensor bracket	support senseur de fin de bande
88	R*	339.874.209	Sensorhalter	sensor bracket	support de senseur
BS 4405			MECHANISCHES UNTERTEIL	MAIN DECK	MECANISME,PARTIE INFERIEURE
201	W*	339.904.135	Feder	spring	ressort
202	X	339.304.206	Capstan-Motor	capstan motor	moteur cabestan
204	E	339.590.090	Durchführungs-Kondensator	feed through capacitor	condensateur de traversée
208	B	339.580.118	Elko	Elko	Elko
210	J	339.729.123	Lager f.Capstanwelle	capstan flywheel assy.	palier p.arbre de cabestan
214	M	339.714.207	Capstan-Schwungmasse	capstan flywheel	volant de cabestan
215	G	339.734.009	Einfädelriemen	capstan belt	courroie d'enfilement
219	A	339.729.124	Drucklager	thrust bearing	palier de butée
220	R*	339.914.206	Klemmen	mini clamper	pinces
222	U*	339.744.206	Bremshebel	brake arm	levier de frein
224	K	339.344.208	Bremsmagnet	brake magnet	aimant de frein
225	K*	339.874.207	Federstift	spring pin	goupille élastique
226	N*	339.904.208	Feder	spring	ressort
231	A	339.444.114	Mikroschalter	micro switch	microcommutateur
232	J	339.354.107	Aufnahmeknopf	pick-up knob	bouton d'enregistrement
235	P	339.729.125	Enfädelantrieb,kpl.	loading gear assy.	entraîneur d'enfilement,cpl.
236	Z	339.304.208	Wickelmotor	loading motor assy.	moteur d'enroulement
237	B	339.590.103	Keramik-Kondensator	ceramic capacitor	condensateur céramique
238	N*	339.924.206	Schraube	screw	vis
239	N*	339.924.207	Schraube	screw	vis
240	I	339.734.108	Riemen	belt	courroie
242	U*	339.829.211	Freigabehebel f.Bandrückzug	back tension canal plate	levier de déblocage p.retr.de bande
243	W*	339.904.138	Feder	spring	ressort
244	U*	339.829.209	Betätigungshebel	connect lecer assy.	levier de manoevre
247	H	339.749.125	Aufwickelkupplung	take-up clutch	embrayage de bobinage
249	V*	339.734.109	Kupplungsriemen	clutch belt	courroue d'embrayage
252	U*	339.935.206	Befestigungsstütze	locking supporter	support de fixation
BS 4406			ZWISCHENDECK-MECH.TEILE	SUB DECK ASSY.	MECANISME,PARTIE INTERMED.
2	A	339.566.112	Löschkopfhalter	erase head arm assy.	support de tête d'effacement
3	I	339.769.110	Spannrolleneinheit	impedance roller assy.	bloc galets tendeurs
5	P	339.359.106	Gesamtlöschkopf	full erase head	tête d'effacement total
8	A	339.904.010	Feder	spring	ressort
9	E	339.829.131	Führungsstift	guide pin	goupille de guidage
10	A	339.829.132	Führungsflansch	guide frange	bride de guidage
11	R*	339.729.109	Nylon-Mutter	nut	écrou
12	P*	339.909.950	Feder	spring	ressort
13	R*	339.904.011	Feder	spring	ressort
14	V	339.354.207	Audio-Kontrollkopf	audio control head assy.	bouton de contrôle audio
16	P*	339.909.950	Feder	spring	ressort
20	M	339.729.119	Abwickelführung,kpl.	supply pole assy.	guidage de débobinage,cpl.
21	M	339.729.120	Aufwickelführung,kpl.	take-up pole base assy.	guidage de bobinage,cpl.
23	T*	339.919.108	Federplatte	spring plate	plaque élastique
26	M	339.729.115	Führung,rechts	guide roller assy.	guidage,droit
28	A	339.566.067	Lampengehäuse	lamp holder	boîte d'ampoule
29	F	339.560.208	Lampe	lamp	ampoule
31	R*	339.933.108	Masseanschlußfahne	earth lug	barette de masse
BS 4407			KOPFTROMMELEINHEIT	DRUM ASSY.	BLOC TAMBOUR
101	Z	339.714.110	Obere Kopftrommeleinheit	upper drum assy.	bloc tambour supérieur
102	Z	339.714.206	Kopftrommel-Motor	lower drum assy.	moteur de tambour
104	P*	339.444.008	Massekontakt	commutator	contact de masse
105	I	339.714.009	Heizung	heater	chauffage
107	W*	339.729.121	Haltewinkel	bracket	équerre de support
111	G	339.409.007	Kontaktfedereinheit	brush assy.	bloc de ressorts de contact
BS 4408			KASSETTENAUFNAHME	CASSETTE HOUSING ASSY.	COMPARTIMENT A CASSETTE
3	N*	339.904.206	Feder	spring	ressort
4	K	339.174.207	Kassettengehäuse-Unterteil,kpl	cassette housing sub assy.	partie infér.du compart.à cassette
12	R*	339.829.208	Entrasthebel	lid opener	levier de déverrouillage
14	A	339.904.124	Feder	spring	ressort
15	R*	339.829.213	Schiebeplatte,kpl.	slide plate assy.	coulisse,cpl.
16	W*	339.904.012	Feder	spring	ressort
17	J	339.769.107	Achse m.Rollen	roller assy.	axe av.rouleau
19	A	339.809.007	Rollenlager	roller bearing	palier de rouleau
20	G	339.874.213	Führungsstütze,rechts	guide stay,right	support de guidage,droit
22	A	339.874.214	Achse	shaft	axe
25	A	339.809.010	Schneckenrad	worm gear	vis sans fin
26	A	339.734.008	Riemen	belt	courroie
28	R*	339.904.007	Feder	spring	ressort

Position	Pr.-Gr.	Bestell-Nr.
29	L	339.30
30	B	339.59
33	H	339.80
34	E	339.82
35	A	339.80
37	C	339.44
39	W*	339.87
40	K	339.80
42	R*	339.87
46	X	339.17
BS 4409		
1	Q	339.18
2	M	339.18
3	D	339.18
4	V*	339.18
5	V*	339.18
6	V*	339.18
7	U*	339.18
9	A	339.18
10	A	339.18
11	A	339.18
BS 4411		
1	L	339.48
BS 4501		
PT 01	I	339.5
BS 4502		
PT 02	I	339.5
BS 4506		
IC 1	M	339.5
IC 2	K	339.5
Q 1	D	339.5
Q 2/3	U*	339.5
5/6		
Q 4	B	339.5
Q 7/8	A	339.5
Q 9	C	339.5
D 1	U*	339.5
D 3-6	P*	339.5
R 9	A	339.5
R 34	A	339.5
R 46	A	339.5
L 1	A	339.3
L 2	A	339.3
L 3	A	339.3
L 4	A	339.3
L 5	B	339.3
SAW 1	M	339.3
CF 2	E	339.3
CF 4	E	339.3
CF 6	F	339.3
T 1	B	339.3
T 2	B	339.3
T 3	A	339.3
T 4	D	339.3
T 5	D	339.3
BS 4507		
IC 202	K	339.5
IC 203	H	339.5
IC 204	H	339.5
IC 205	P	339.5
IC 206	S	339.5
IC 207	O	339.5
IC 208/209	F	339.5
212		
IC 211	K	339.5
Q 201/202	W*	339.5
Q 203	C	339.5
Q 204	G	339.5

Position	Pr.-Gr.	Bestell-Nr.	Bezeichnung	Item	Description
29	L	339.304.207	Kassetten-Motor,kpl.	cassette motor assy.	moteur de cassette,cpl.
30	B	339.590.103	Kondensator	capacitor	condensateur
33	H	339.809.008	Kette	chain	chaîne
34	E	339.829.127	Kettenzahnrad	sprocket gear	roue à chaîne
35	A	339.809.009	Zahnrad	worm wheel gear	roue dentée
37	C	339.444.113	Mikroschalter	micro switch	microcommutateur
39	W*	339.874.215	Führungsstütze,links	guide stay,left	support de guidage,gauche
40	K	339.809.011	Getriebeverbindungsachse	connect gear assy.	axe de jonction d'engrenage
42	R*	339.874.216	Hilfsplatte	assist.plate	plaque supplémentaire
46	X	339.174.206	Kassettengehäuse,kpl.	cassette housing assy.	compartiment à cassette,cpl.
BS 4409			FERNBEDIENUNGSEINHEIT	REMOTE CONTROL UNIT	BLOC DE TELECOMMANDE
1	Q	339.183.218	Gehäuseoberschale	upper case assy.	coquille supér.de boîte
2	M	339.183.219	Gehäuseunterschale	lower case	coquille infér.de boîte
3	D	339.183.220	Batteriefachdeckel	battery cover	couvercle compart.à pile
4	V*	339.183.221	IR-Fenster	IR window glass	voyant infrarouge
5	V*	339.183.222	Knopf,dunkelgrau	knob,dark grey	bouton,gris
6	V*	339.183.212	Knopf,rot	knob,red	bouton,rouge
7	U*	339.183.213	Tastengummi	key-top rubber	pièce caoutch.p.touche
9	A	339.183.214	Kontakt	contact piece	pièce de contact
10	A	339.183.215	Kontakt	contact piece	pièce de contact
11	A	339.183.216	Kontakt	contact piece	pièce de contact
BS 4411			ZUBEHÖR	ACCESSORY	ACCESSOIRES
1	L	339.489.117	Antennenkabel	antenna cable	câble d'antenne
BS 4501			START-SENSORPLATTE	START SENSOR CIRCUIT BOARD	BLOC SENSEUR DE DEMARRAGE
PT 01	I	339.556.242	Photo-Transistor PN 202 S	photo transistor PN 202 S	photo transistor PN 202 S
BS 4502			ENDSENSORPLATTE	END SENSOR CIRCUIT BOARD	BLOC SENSEUR DE FIN DE BANDE
PT 02	I	339.556.242	Photo-Transistor PN 202 S	photo transistor PN 202 S	photo transistor PN 202 S
BS 4506			TUNER-ZF-PLATTE	TUNER-IF CIRCUIT BOARD	BLOC TUNER FI
IC 1	M	339.575.160	IC-AN 5111	IC-AN 5111	IC-AN 5111
IC 2	K	339.575.303	IC-UPC 1391 H	IC-UPC 1391 H	IC-UPC 1391 H
Q 1	D	339.556.462	Transistor 2 SC 2188	transistor 2 SC 2188	transistor 2 SC 2188
Q 2/3 5/6	U*	339.556.557	Transistor 2 SC 2647 BC	transistor 2 SC 2647 BC	transistor 2 SC 2647 BC
Q 4	B	339.556.467	Transistor 2 SD 637 QR	transistor 2 SD 637 QR	transistor 2 SD 637 QR
Q 7/8	A	339.556.320	Transistor 2 SB 641 RS	transistor 2 SB 641 RS	transistor 2 SB 641 RS
Q 9	C	339.556.304	Transistor 2 SA 10200 OY	transistor 2 SA 10200 OY	transistor 2 SA 10200 OY
D 1	U*	339.529.425	Diode RD 6,8 EB 3	diode RD 6,8 EB 3	diode RD 6,8 EB 3
D 3-6	P*	339.529.230	Diode 1 SS 133	diode 1 SS 133	diode 1 SS 133
R 9	A	339.509.153	Einsteller 2,2 KOhm	var.res.2,2 KOhm	rés.var.2,2 KOhm
R 34	A	339.509.145	Einsteller 4,7 KOhm	var.res.4,7 KOhm	rés.var.4,7 KOhm
R 46	A	339.509.146	Einsteller 10 KOhm	var.res.10 KOhm	rés.var.10 KOhm
L 1	A	339.349.163	Resonanzspule	peaking coil	bobine d'accord
L 2	A	339.349.023	Resonanzspule	peaking coil	bobine d'accord
L 3	A	339.349.028	Resonanzspule	peaking coil	bobine d'accord
L 4	A	339.349.037	Resonanzspule	peaking coil	bobine d'accord
L 5	B	339.349.141	Resonanzspule	peaking coil	bobine d'accord
SAW 1	M	339.369.119	Filter	filter	filtre
CF 2	E	339.369.122	Keramik-Filter	ceramic filter	filtre céramique
CF 4	E	339.369.213	Keramik-Filter	ceramic filter	filtre céramique
CF 6	F	339.369.123	Keramik-Filter	ceramic filter	filtre céramique
T 1	B	339.369.120	ZF-Filter	IF filter	filtre FI
T 2	B	339.349.017	AFC-Spule	AFC coil	bobine CAF
T 3	A	339.349.019	Spule	coil	bobine
T 4	D	339.367.212	ZF-Filter	IF filter	filtre FI
T 5	D	339.367.118	ZF-Filter	IF filter	filtre FI
BS 4507			TUNER/TIMER-STEUERPLATTE	TUNER/TIMER CONTROL BOARD	BLOC DE COMMANDE TUNER/TIMER
IC 202	K	339.575.398	IC-MN 1204 E	IC-MN 1204 E	IC-MN 1204 E
IC 203	H	339.575.409	IC-MB 3761 M	IC-MB 3761 M	IC-MB 3761 M
IC 204	H	339.575.172	IC-UPC 358 C	IC-UPC 358 C	IC-UPC 358 C
IC 205	P	339.575.399	IC-MN 1218 A	IC-MN 1218 A	IC-MN 1218 A
IC 206	S	339.575.410	IC-MB 8851 AM-143 L	IC-MB 8851 AM-143 L	IC-MB 8851 AM-143 L
IC 207	O	339.575.405	IC-UPD 552 C-088	IC-UPD 552 C-08	IC-UPD 552 C-088
IC 208/209 212	F	339.575.408	IC-IR 2403	IC-IR 2403	IC-IR 2403
IC 211	K	339.575.403	IC-UPD 4029 C	IC-UPD 4029 C	IC-UPD 4029 C
Q 201/202	W*	339.556.314	Transistor 2 SD 637 R	transistor 2 SD 637 R	transistor 2 SD 637 R
Q 203	C	339.556.232	Transistor 2 SB 643 R	transistor 2 SB 643 R	transistor 2 SB 643 R
Q 204	G	339.556.269	Transistor 2 SC 1983 R	transistor 2 SC 1983 R	transistor 2 SC 1983 R

Position	Pr.-Gr.	Bestell-Nr.	Bezeichnung	Item	Description
D 202/203 D 204/206 207/208 211/212 213/215 216/217/ 219/221	E C	339.529.274 339.529.230	Diode 10 E 2 Diode 1 SS 133	diode 10 E 2 diode 1 SS 133	diode 10 E 2 diode 1 SS 133
D 205	I	339.529.416	Diode HZ 6 A 1 L	diode HZ 6 A 1 L	diode HZ 6 A 1 L
D 209	A	339.529.417	Diode HZ 6 B 3	diode HZ 6 B 3	diode HZ 6 B 3
D 214	B	339.529.324	LED SLP 135 B	LED SLP 135 B	LED SLP 135 B
R 234	H	339.509.206	Einstellwid	var.res.	rés.var.
L 201	A	339.349.024	Resonanzspule	peaking coil	bobine d'accord
CP 1	C	339.575.413	IC-ICP -F 10	IC-ICP-F 10	IC-ICP-F 10
X'tal 201	I	339.349.206	Quarz	quartz	quartz
CF 201	F	339.369.011	Keramik-Filter	ceramic filter	filtre céramique
S 201	D	339.444.213	Schiebeschalter	slide switch	commutateur curseur
S 202	C	339.444.214	Schiebeschalter	slide switch	commutateur curseur
BS 4538			ANZEIGEPLATTE	CONTROL BOARD	BLOC D'AFFICHAGE
IC 401	O	339.575.404	IC-UPD 552 C-079	IC-UPD 552 C-079	IC-UPD 552 C-079
D 401-412	B	339.529.228	LED SLR 54 MT 4	LED SLR 54 MT 4	LED SLR 54 MT 4
CF 401	F	339.369.011	Keramik-Filter	ceramic filter	filtre céramique
	B	339.444.116	Taktschalter	tact switch	commutateur de cadence
BS 4539			FARBVERSTÄRKERPLATTE	COLOUR AMPLIFIER BOARD	BLOC AMPLIFICATEUR DE COULEUR
IC 201/202	F	339.575.389	IC-BA 70001	IC-BA 70001	IC-BA 70001
IC 203	I	339.575.298	IC-BA 70004	IC-BA 70004	IC-BA 70004
IC 401	N	339.575.294	IC-AN 6360	IC-AN 6360	IC-AN 6360
IC 402	P	339.575.295	IC-AN 6362	IC-AN 6362	IC-AN 6362
IC 403	N	339.575.296	IC-AN 6371	IC-AN 6371	IC-AN 6371
IC 404	G	339.575.137	IC-BA 401	IC-BA 401	IC-BA 401
IC 405	Q	339.575.411	IC-21 VT 08	IC-21 VT 08	IC-21 VT 08
Q 101	G	339.556.313	Transistor 2 SD 1128-02	transistor 2 SD 1128-02	transistor 2 SD 1128-02
Q 102/103 105	C	339.556.232	Transistor 2 SB 643 R	transistor 2 SB 643 R	transistor 2 SB 643 R
Q 104/109 204/405	B	339.556.468	Transistor 2 SC 2021 Q	transistor 2 SC 2021 Q	transistor 2 SC 2021 Q
Q 106/201 202/205-08 401-404/ 406/408/ 410	B	339.556.470	Transistor 2 SC 2021 QRS	transistor 2 SC 2021 QRS	transistor 2 SC 2021 QRS
Q 203	A	339.556.287	Transistor 2 SD 638 QR	transistor 2 SD 638 QR	transistor 2 SD 638 QR
Q 409	V*	339.556.312	Transistor 2 SC 2647 C	transistor 2 SC 2647 C	transistor 2 SC 2647 C
D 101	B	339.529.341	Diode HZ 9 A 1	diode HZ 9 A 1	diode HZ 9 A 1
D 102	B	339.529.330	Diode MA 27 TA	diode MA 27 TA	diode MA 27 TA
D 103/104 108/201-07 401-406	W*	339.529.109	Diode MA 150	diode MA 150	diode MA 150
R 441	C	339.509.011	Einsteller	variable resistor	résistance variable
R 465	B	339.509.954	Einsteller	variable resistor	résistance variable
L 201/204 401/402/ 403/405/ 411/417	A	339.349.156	Spule	coil	bobine
L 202	A	339.349.161	Spule	coil	bobine
L 203	A	339.349.162	Spule	coil	bobine
L 404	A	339.349.217	Spule	coil	bobine
L 407	A	339.349.170	Spule	coil	bobine
L 408	A	339.349.169	Spule	coil	bobine
L 409	A	339.349.165	Spule	coil	bobine
L 412	D	339.349.966	Spule	coil	bobine
L 413	A	339.349.160	Spule	coil	bobine
L 414	B	339.349.029	Spule	coil	bobine
L 415	B	339.349.009	Spule	coil	bobine
L 416	B	339.349.030	Spule	coil	bobine
L 418	F	339.349.988	Spule	coil	bobine
IB 102	B	339.537.127	Hybrid-Schaltung	inline block	bloc hybride
IB 103	B	339.537.128	Hybrid-Schaltung	inline block	bloc hybride
IB 104	B	339.537.129	Hybrid-Schaltung	inline block	bloc hybride
DL 401	T	339.489.114	Verzögerungsleitung	delay line	ligne de retard